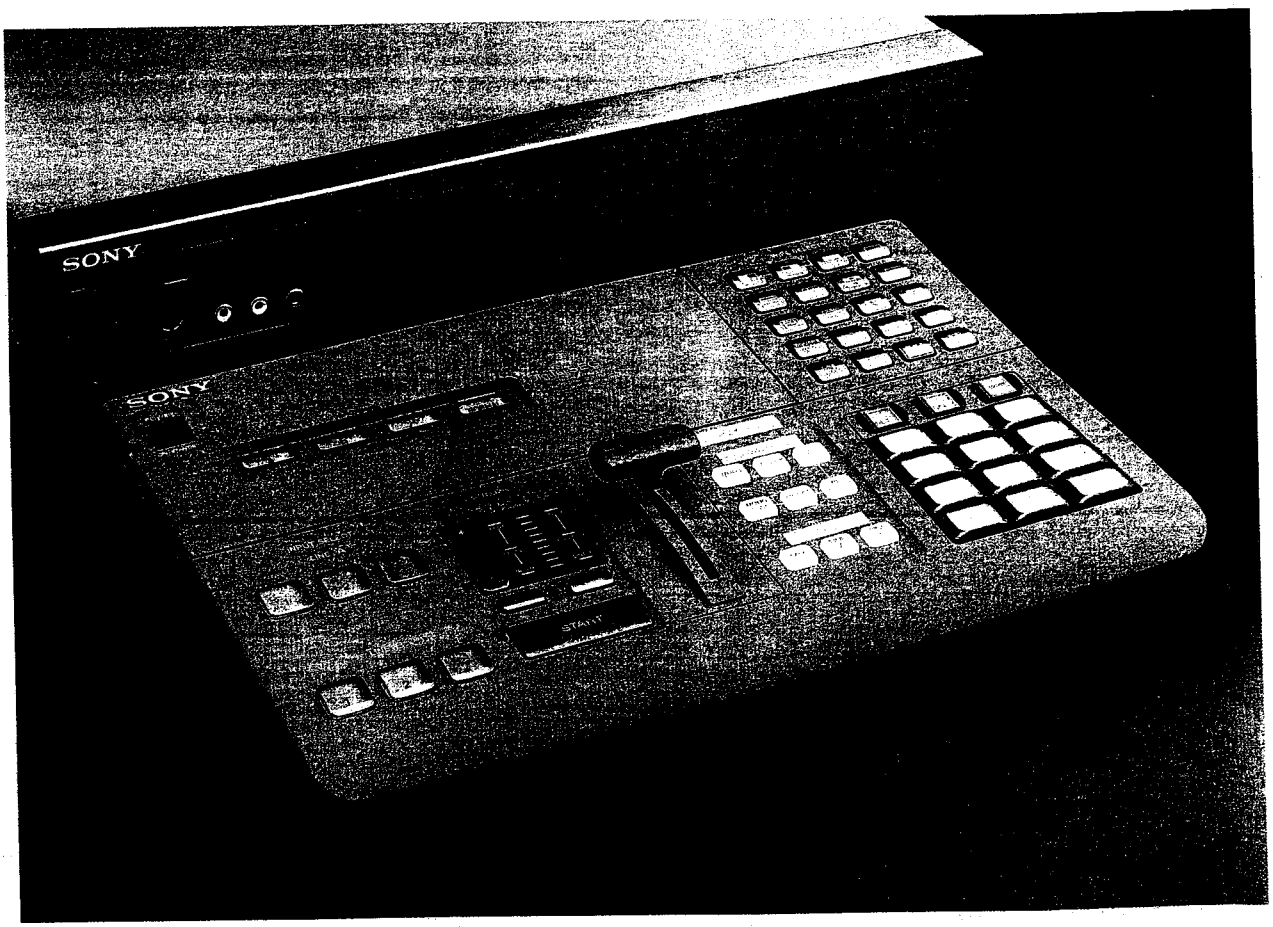
SONY

Digital Special Effects Generator

XV-D1000

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.



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WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

If the plug supplied with this appliance is not suitable for the socket outlet in your home, it should be cut off and an appropriate plug fitted.

If the plug supplied with this appliance has detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover.
If you should lose the fuse cover, please contact your nearest Sony service station.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
Do not connect either wire to the earth terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.

Should the fuse in the plug supplied with this appliance need to be replaced, a 5 AMP FUSE approved by ASTA to BS 1362, i.e. carrying the ASTA mark, must be used.

WARNING

To prevent shock hazard, do not insert the plug cut off from the mains lead into a socket outlet. This plug cannot be used and should be discarded.

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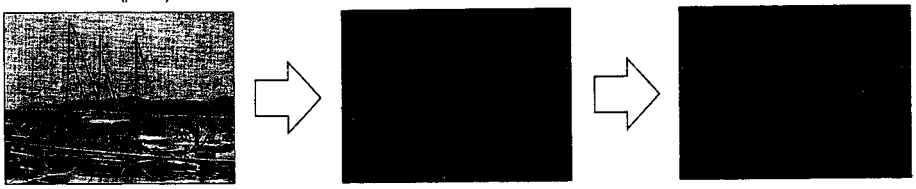
What You Can Do with the Digital SEG

The XV-D1000 Digital SEG (Special Effects Generator) offers you the enjoyment of processing video images while watching or editing a video. You can switch from one image to another with effects such as overlap and wipe. And you can generate digital effects such as multi-picture, title index, afterimage and mosaic. In addition, you can make a program combining several effects so that you can generate those effects with one push of a button.
The photographs below show some of the effects available with this digital SEG.

Mix with overlap (p.17)

Mix with mosaic (p.18)

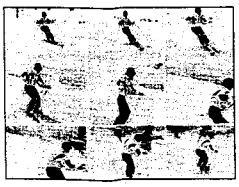
Black fade (p.19)



Wipe (p.20)

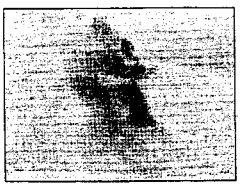
Wipe (p.20)

Multi-picture (p.30)

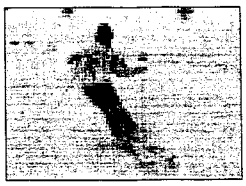


Title index picture (p.30)

Afterimage picture (p.30)



Mosaic picture (p.30)

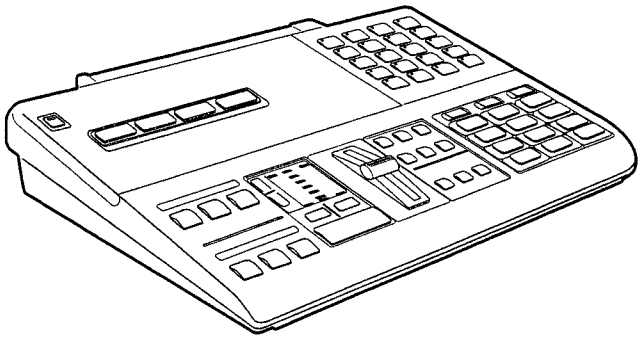


You can take a look at the main effects on the monitor by using the demonstration of the option functions. See page 53 for the operation.

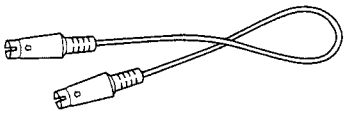
Supplied Accessories

Check that the following accessories are supplied.

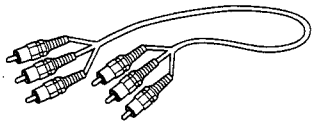
Control Unit (1)



S video connecting cable (2)



A/V connecting cable (2)



Which Connections to Make?

You can connect equipment such as player, monitor, recorder, audio equipment and editing controller to the digital SEG. You can connect a maximum of 3 players.

The connections depend on what you are going to do using the digital SEG.

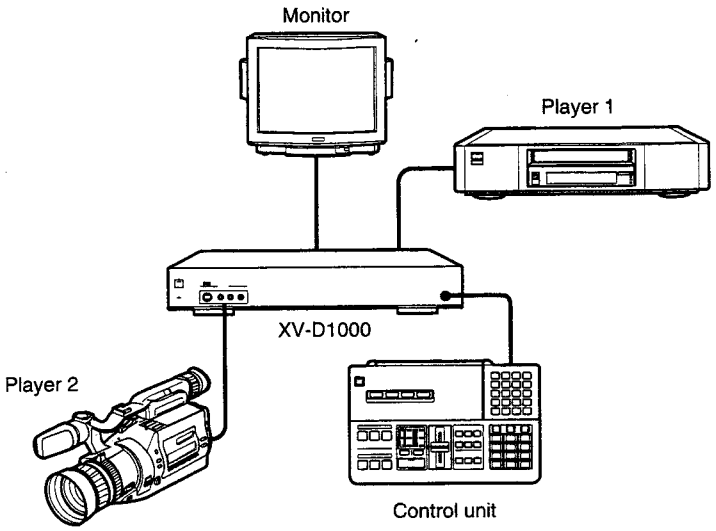
- Connection to process and switch the images
- Connection to process and edit the image
- Connection to mix the sound from audio equipment
- Connection to control from editing controller

The equipment you need and how to connect them are explained below.

Connection to Process and Switch the Images

You need 2 players and 1 monitor.
You can connect 3 players.
If you have only 1 player, you can still enjoy processing a picture as you can select same signal for the LINE A and LINE B image, see page 16.
Follow "Connections":

1 (page 9)
↓
2 (page 10)
↓
6 (page 12)

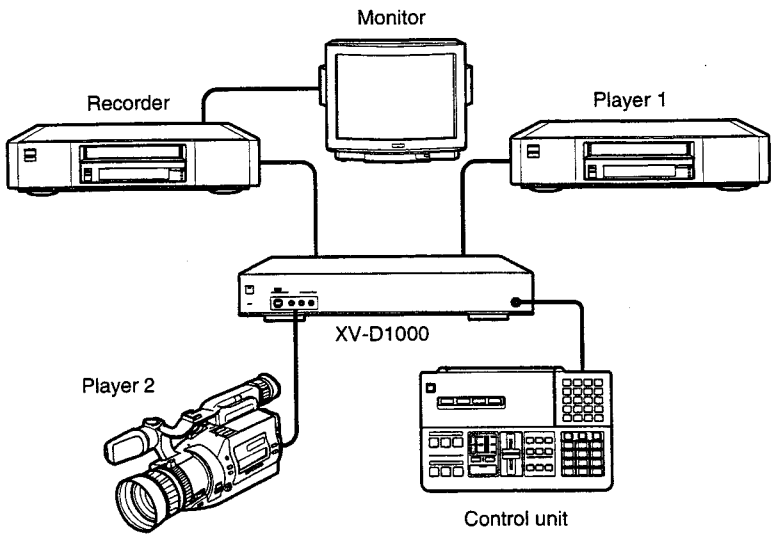


Connection to Process and Edit the Image

You need 2 players, 1 recorder and 1 monitor.
Follow "Connections":

1 (page 9)
↓
3 (page 11)
↓
6 (page 12)

When you connect a recorder, connect a monitor to the recorder so that you can view the playback picture on the recorder.

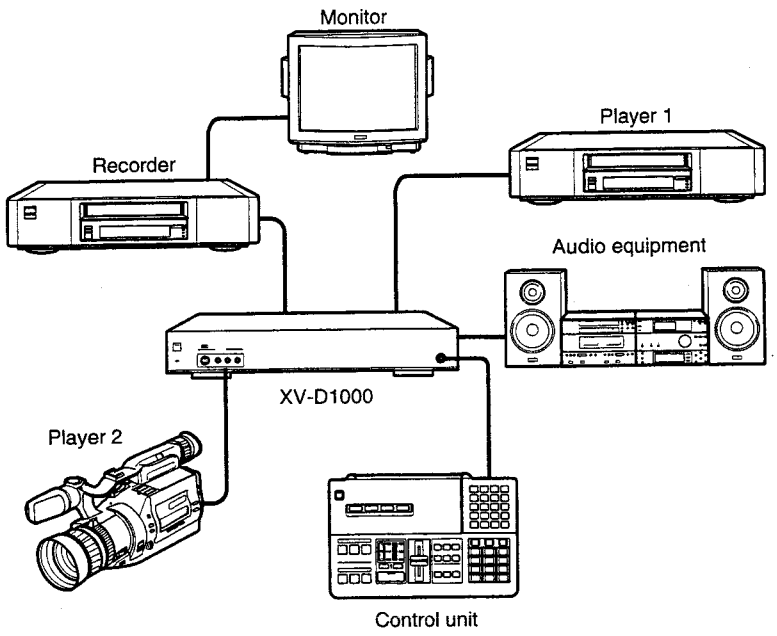


Connection to Mix the Sound from Audio Equipment

You need 2 players, 1 monitor, 1 recorder and audio equipment such as a CD player.
Follow "Connections":

1 (page 9)
↓
3 (page 11)
↓
4 (page 11)
↓
6 (page 12)

When you connect a recorder, connect a monitor to the recorder so that you can view the playback picture on the recorder.

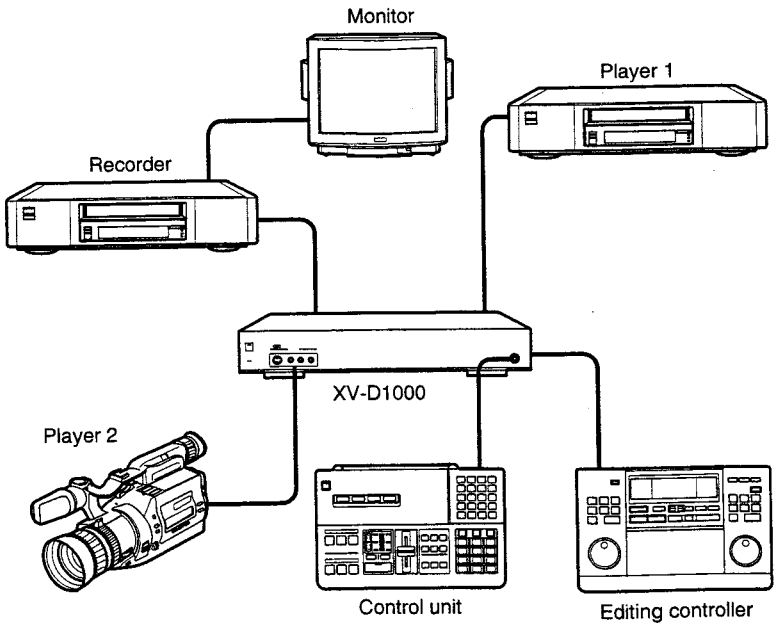


Connection to Control from Editing Controller

You can execute the program memory of the digital SEG from an editing controller with GPI output such as the Sony RM-E500/E700 (not supplied).
Follow "Connections":

1 (page 9)
↓
3 (page 11)
↓
5 (page 12)
↓
6 (page 12)

When you connect a recorder, connect a monitor to the recorder so that you can view the playback picture on the recorder.



Which Connections to Make?

Notes on Connection

- Be sure to turn off the power of the equipment before connection.
- When both the player and the recorder have S video jacks, we recommend connecting the S video jacks to obtain a high quality picture.
- Connect the red plug to the right audio jack (red) and the white plug to the left audio jack (white).
- Connect the yellow plug to the video jack (yellow).
- If you connect both of the S video and video input jacks, the S video signal is selected automatically. To view the video signal, disconnect the S video input jack.
- You may connect the player through the video input jack and the recorder through the S video output jack. The video signal input to the digital SEG can be output through the S video output jack.
- Or you may connect the player through the S video input jack and the recorder through the video output jack. In this case, the S video signal input to the digital SEG can be output through the video output jack.
- When you connect a monaural player to the INPUT jacks of the digital SEG, connect only the left (white) jack for audio. The sound is output from the left and right in monaural.
- When you connect a monaural recorder to the OUTPUT jacks of the digital SEG, use a monaural audio connecting cable.
- When your monitor has an EURO-AV (21-pin) connector, use the VMC-2106S connecting cable (not supplied).

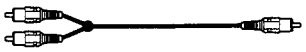
Optional Connecting Cables

We recommend that you use the following A/V connecting cables to connect additional players or recorders.

To connect a stereo model		
VMC-810HG VMC-815HG VMC-820HG VMC-830HG	1 m 1.5 m 2 m 3 m	phono x 3 to phono x 3

To connect an S video jack		
YC-10V YC-15V	1 m 1.5 m	4-pin mini-DIN to 4-pin mini-DIN

To connect a video jack		
VMC-10HG VMC-30HG	1 m 3 m	phono x 1 to phono x 1

Audio connecting cable		
RK-C510HG RK-C515HG RK-C520HG RK-C530HG	1 m 1.5 m 2 m 3 m	phono x 2 to phono x 2
RK-C230HG (for monaural model)	3 m	phono x 2 to phono x 1 

Connection 1 — Connecting the Players

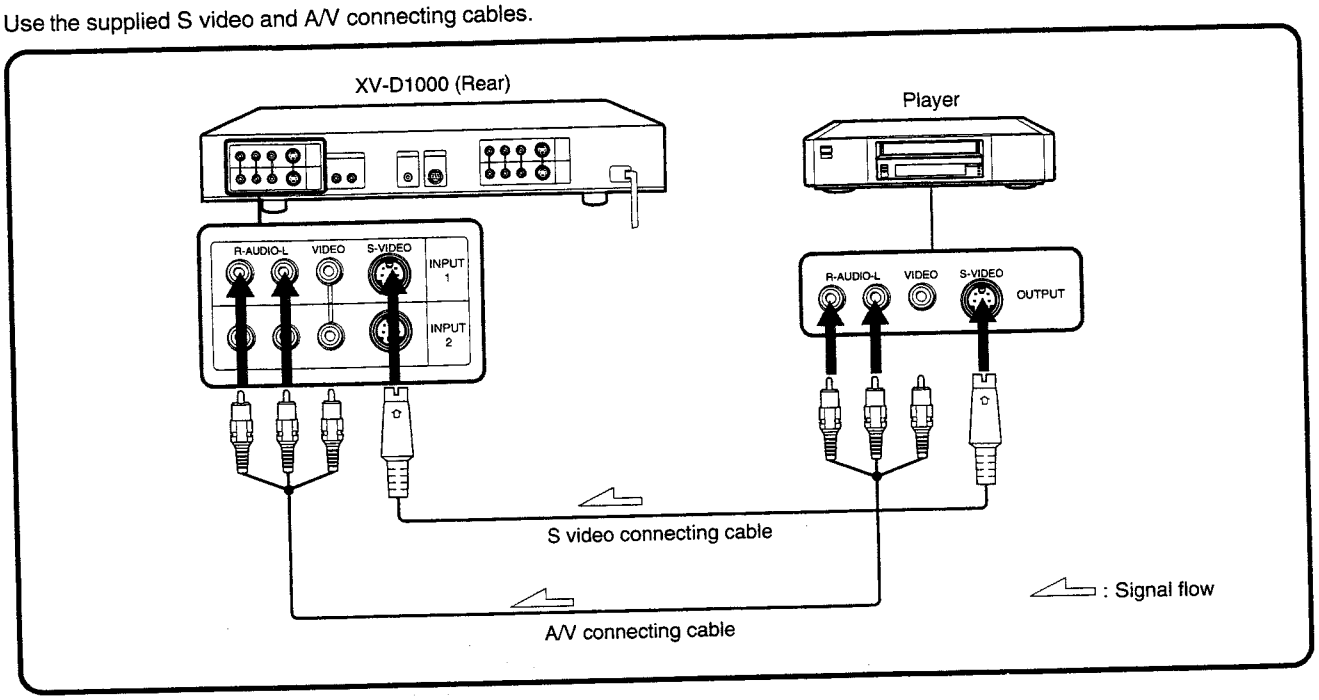
You can connect 3 players to the digital SEG using the INPUT 1 and INPUT 2 jacks on the rear paneal, and the INPUT 3 jacks on the front panel.

Note

If you need more connecting cables, use the recommended connecting cables shown on page 8.

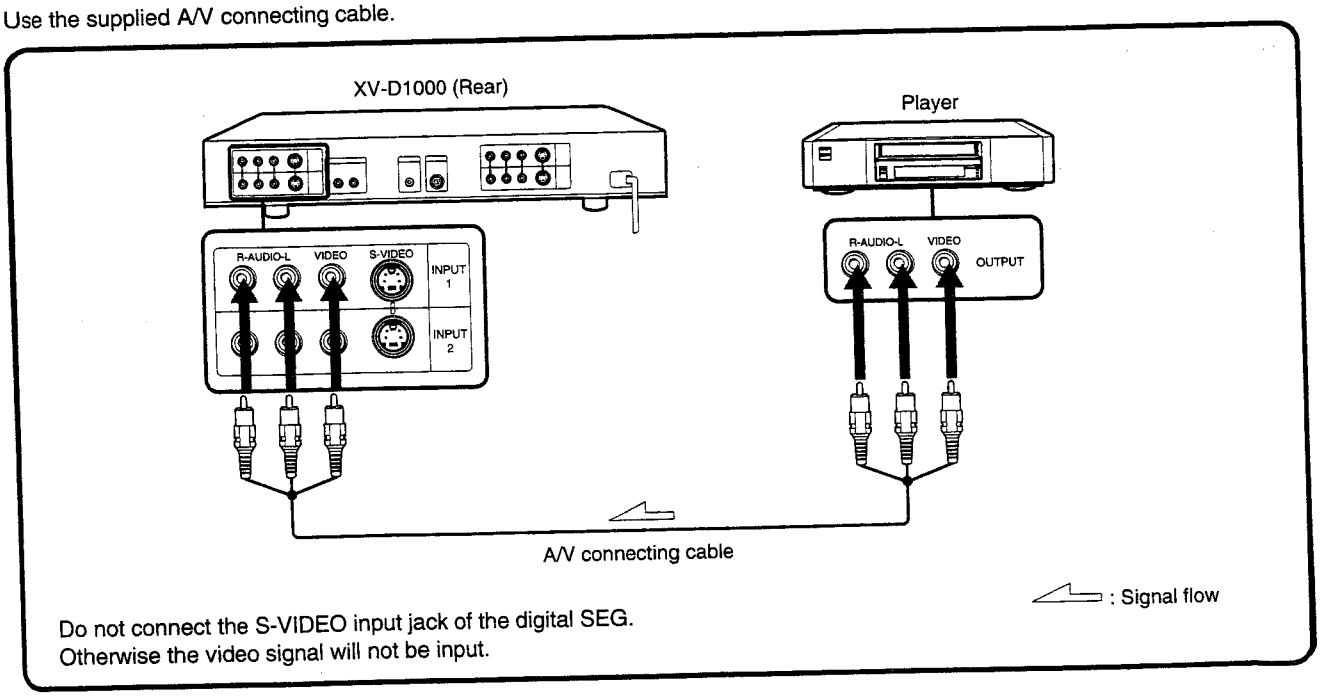
Connecting Players with an S Video Output Jack

Use the supplied S video and A/V connecting cables.



Connecting Players without an S Video Output Jack

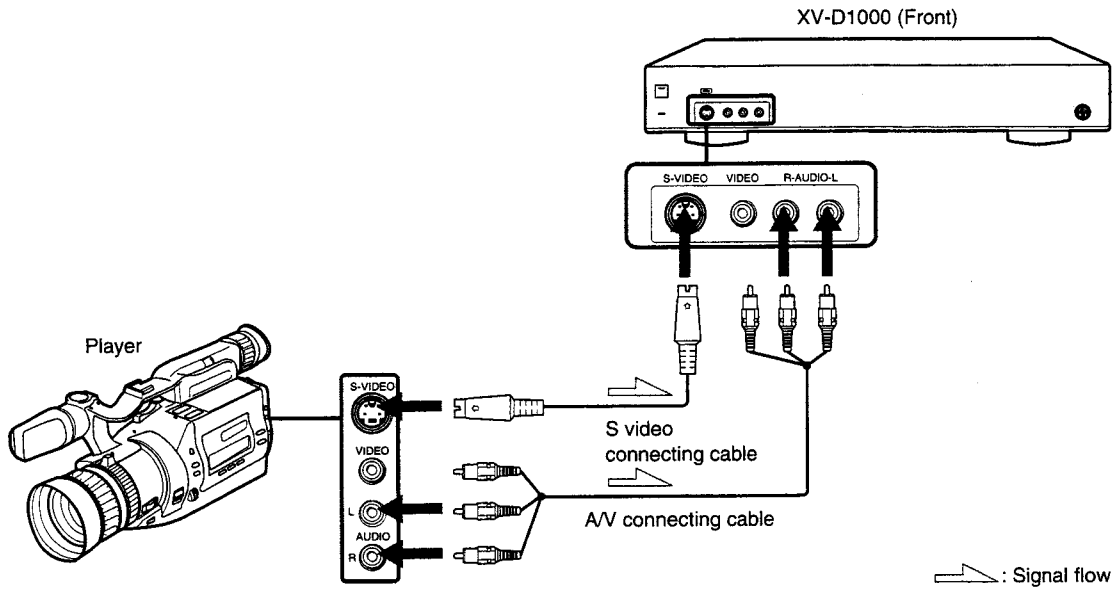
Use the supplied A/V connecting cable.



Do not connect the S-VIDEO input jack of the digital SEG.
Otherwise the video signal will not be input.

Connection 1 — Connecting the Players

Connecting Players to the INPUT 3 Jacks on the Front Panel

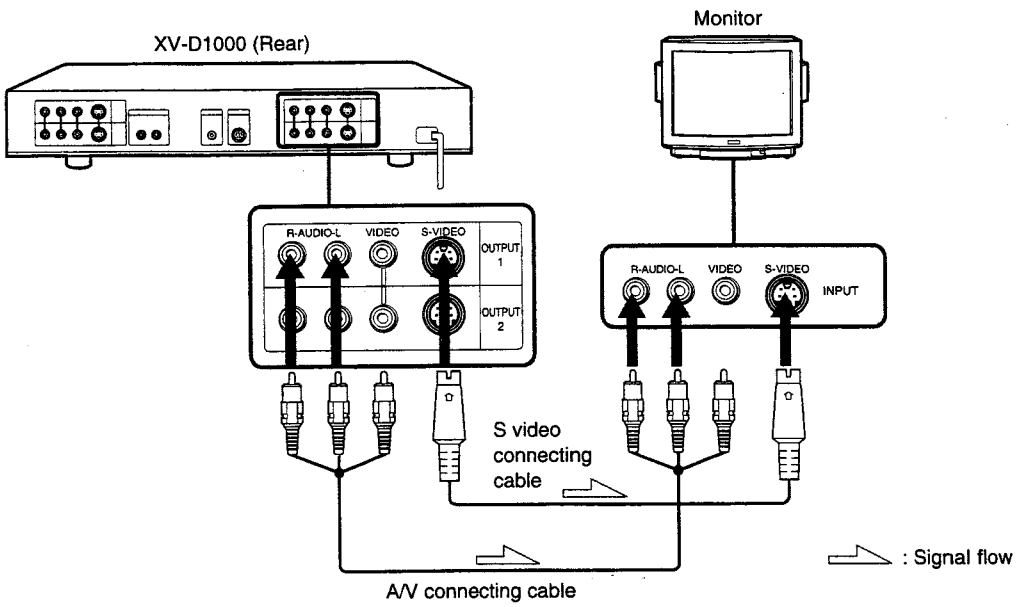


Do not connect the S-VIDEO input jack of the digital SEG.
Otherwise the video signal will not be input.

Connection 2 — Connecting the Monitor

Connect a monitor to the OUTPUT jacks on the rear panel.

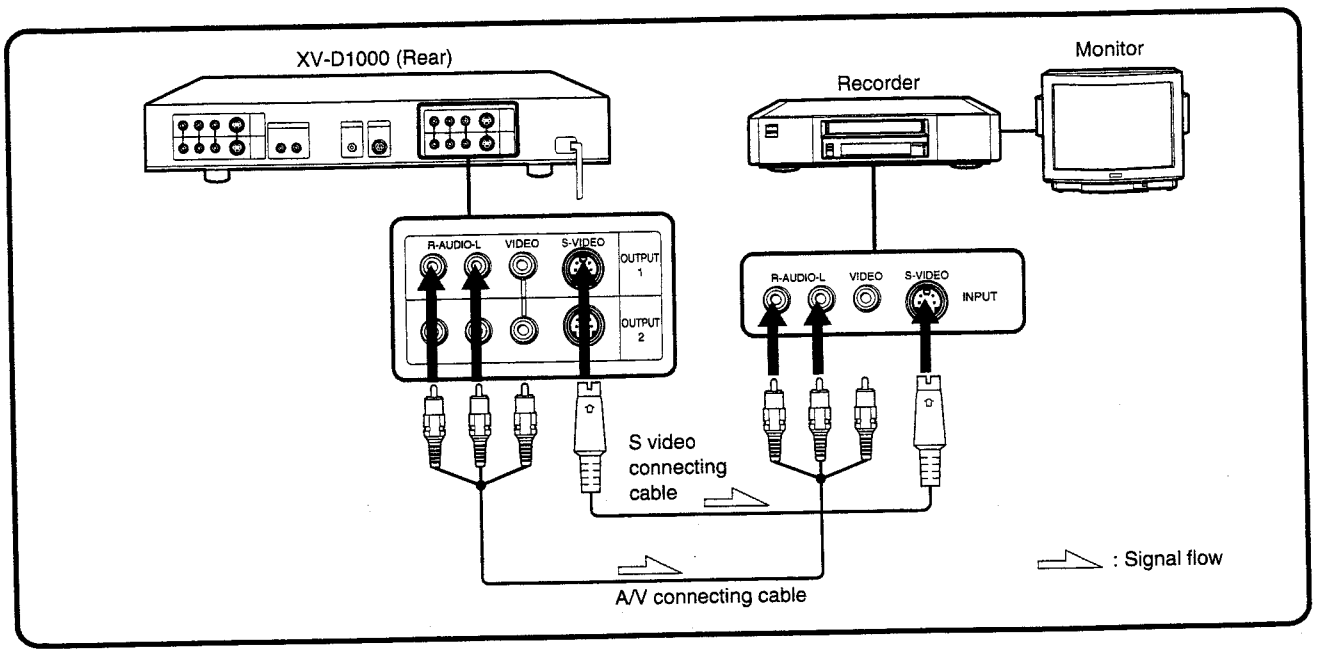
When your monitor does not have an S video jack, connect the VIDEO jacks.



Connection 3 — Connecting the Recorder

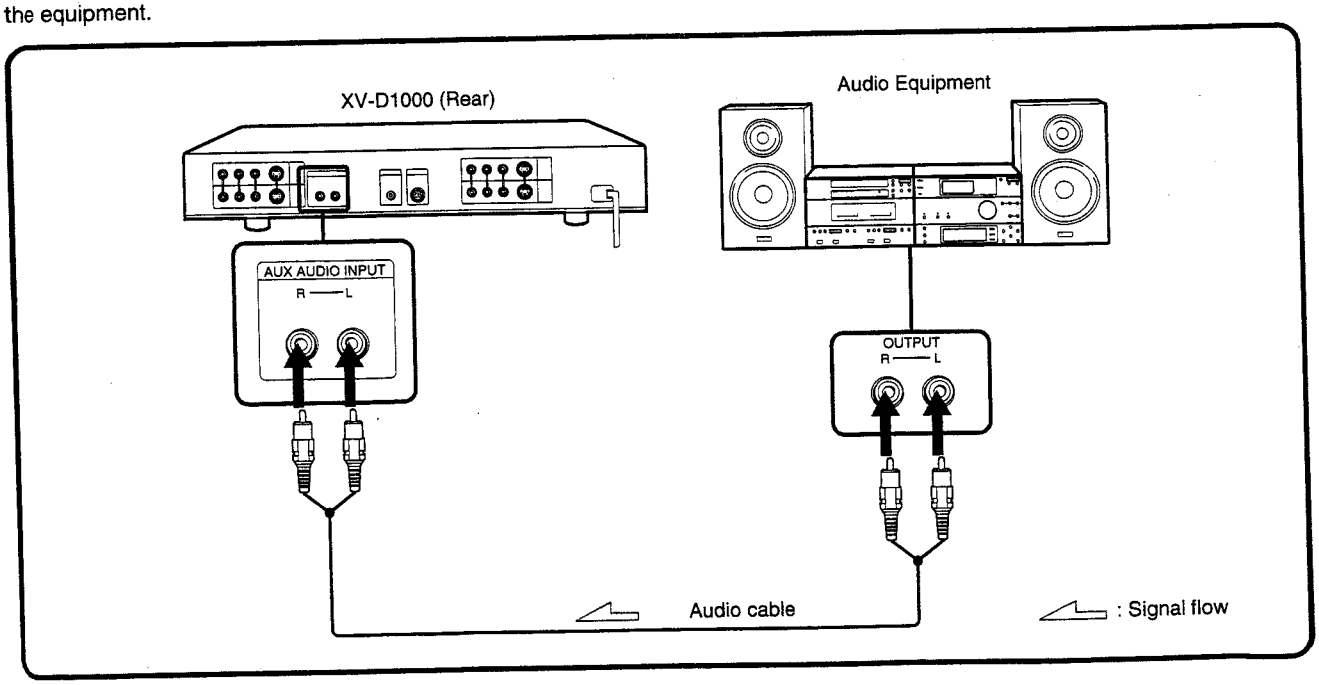
Connect the recorder to the OUTPUT jacks on the rear panel using the recommended connecting cables shown on page 8.

When your recorder does not have an S video jack, connect the VIDEO jacks.



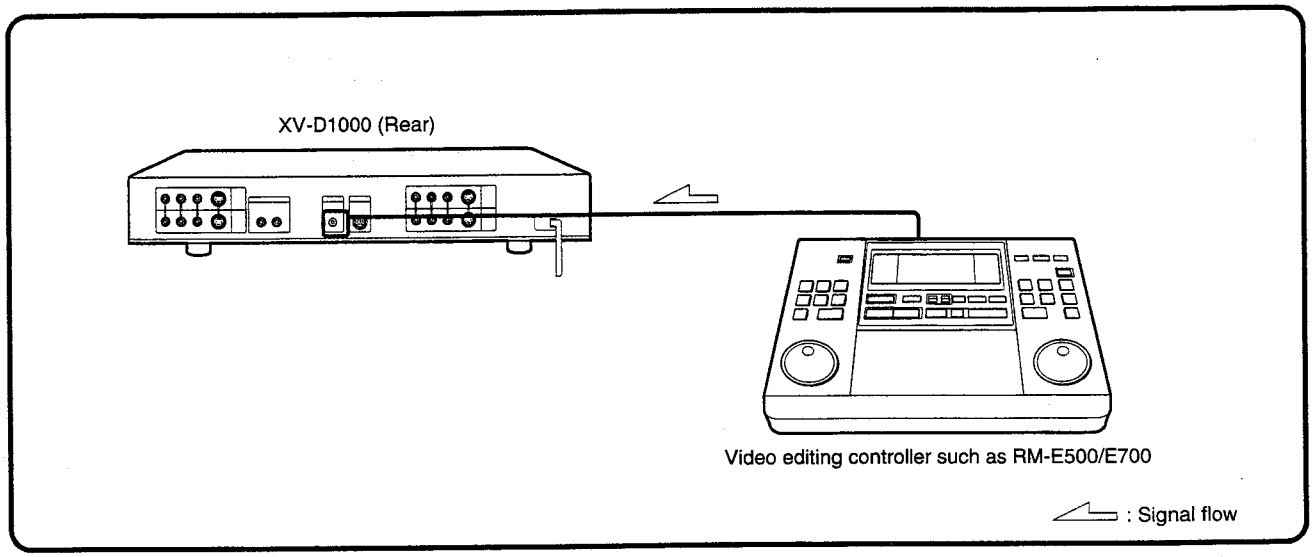
Connection 4 — Connecting an Audio Equipment

Connect the audio equipment to the AUX AUDIO INPUT L/R jacks on the rear panel. Use a proper connecting cable for the equipment.



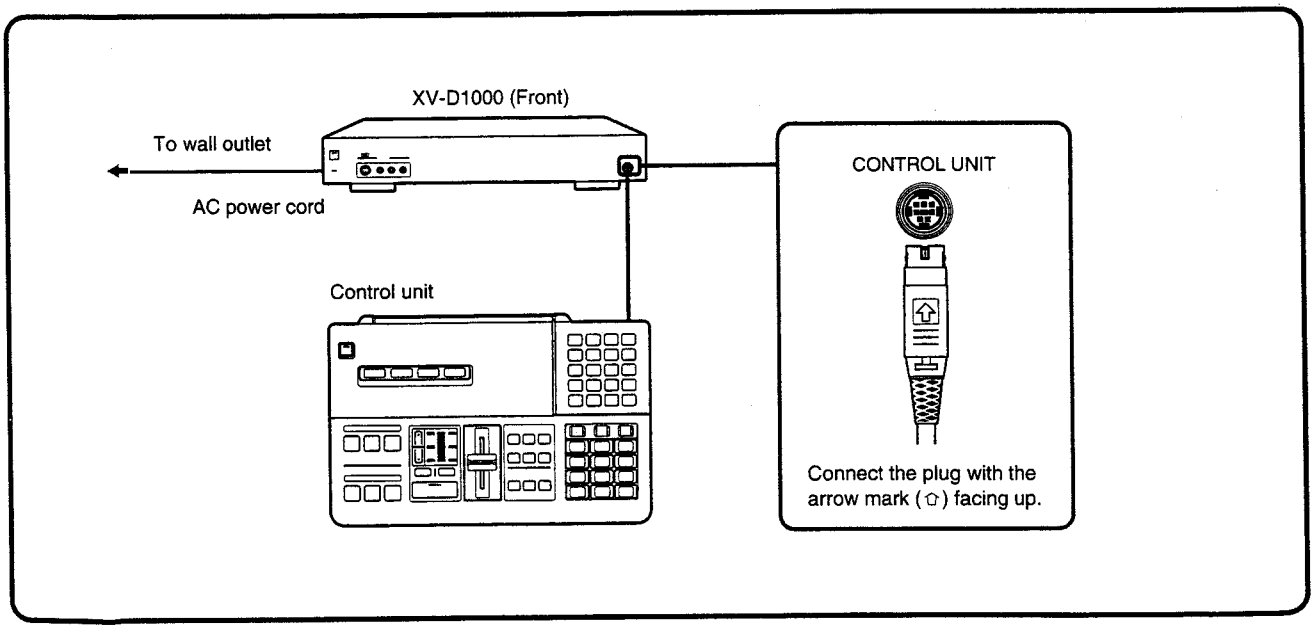
Connection 5 — Connecting an Editing Controller

Connect an editing controller to the GPI INPUT jack on the rear panel. Use a proper connecting cable for the equipment.



Connection 6 — Connecting the Control Unit and the AC Power Cord

Connect the control unit to the CONTROL UNIT jack on the front panel. Then connect the AC power cord to a wall outlet.



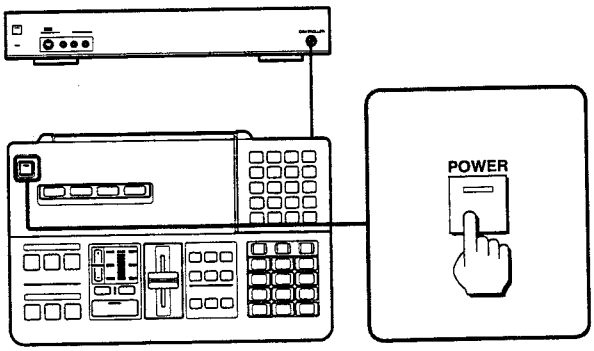
In this chapter, we explain from turning on the power to switching the images.

Basic Switching Operation

Switching Operation

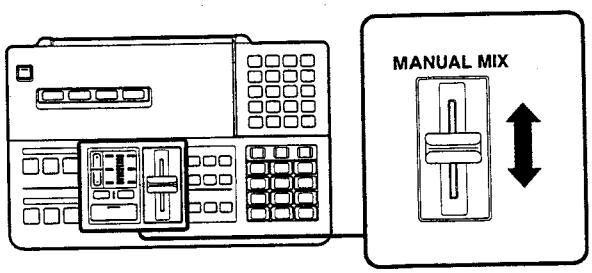
You can switch the images basically as described below. You can select a particular signal (page 16) and switching effect (page 17).

1 **Press the POWER switch to turn on the power.**



2 **Play back the tapes.**

3 **Move the switching lever up or down.**
The images switches with the overlap effect.

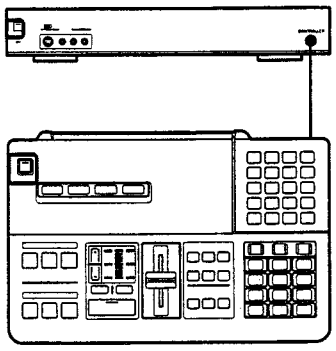


Basic Switching Operation

Steps for Switching Images

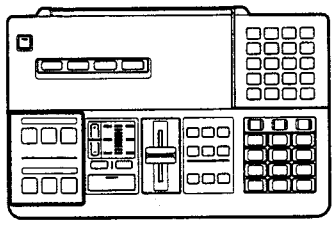
The steps for switching images are as follows.

1 **Turn on the power.** ➡ Page 15

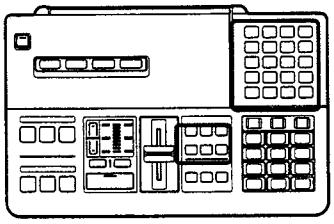


2 **Play back the tapes.**

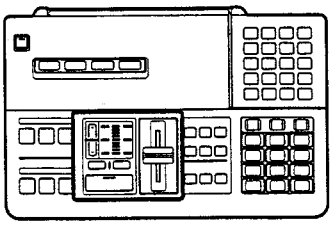
3 **Select the input signals.** ➡ Page 16



4 **Select the switching effect.** ➡ Page 17

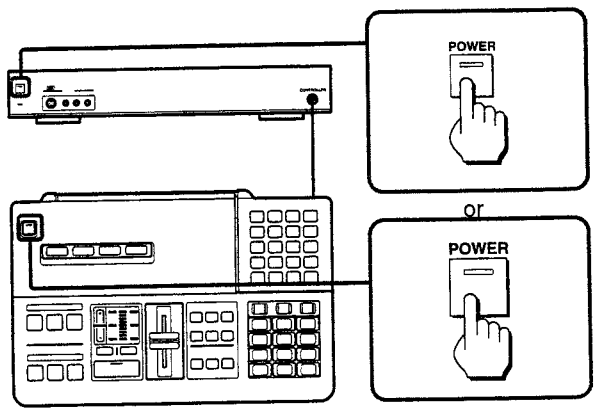


5 **Switch the images.** ➡ Page 26



Turning on the Power

Press the POWER switch of the control unit or the main unit.
The lamp of the POWER switch lights up.
The buttons of the initial condition light up.



When you finish using the digital SEG

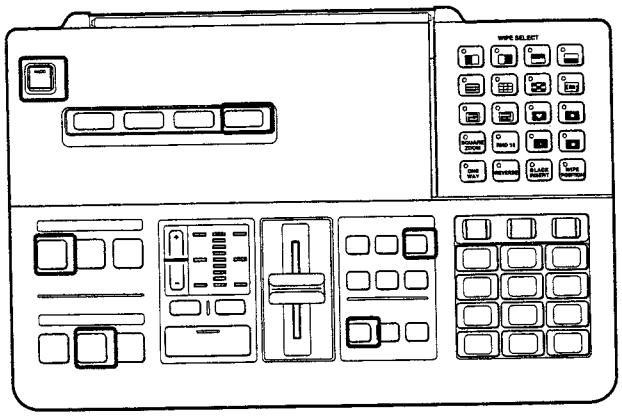
Press the POWER switch again.
The lamp of the POWER switch turns off.
The digital SEG enters standby mode and the STANDBY lamp of the main unit lights up.

When you will not use the digital SEG for long time

Disconnect the AC power cord. The STANDBY lamp goes out.

On the initial condition
The illustration below shows the buttons which are lit up in the initial condition.

- The LINE A image is the signal input to the INPUT 1 jacks. (To select the signal, see page 16.)
- The LINE B image is the signal input to the INPUT 2 jacks.
- Switch the images while overlapping. (To select the switching effect, see page 18. To select the audio signal, see page 29.)
- Switch the images in manual mode. (To switch in automatic mode, see page 27.)



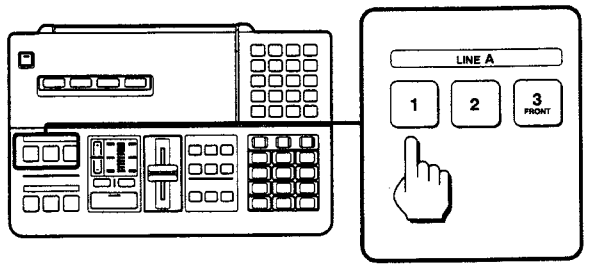
Selecting the Signals

The digital SEG switches the images from the LINE A image to the LINE B image, or from the LINE B image to the LINE A image. Consequently, you must select the signals to be the LINE A and LINE B images.

The numbers ([1], [2], [3]) of the INPUT select buttons correspond the numbers of the INPUT jacks.
When you turn on the digital SEG, the digital SEG becomes the initial condition.

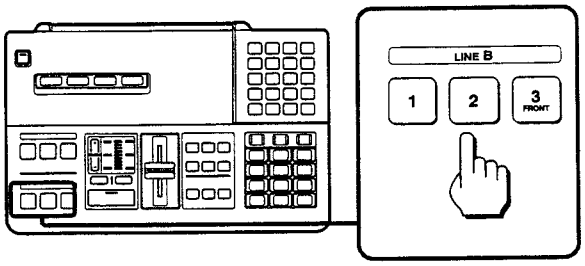
To select the LINE A image

Press the number button of LINE A to turn it on.



To select the LINE B image

Press the number button of LINE B to turn it on.



Notes

- If no signal is input through the jacks you selected, the image of previously selected signal appears frozen. A part of image may be lost. The same happens when the signal input stops such as when you stop the playback or the tape becomes the end.
- You can select the same signal for the LINE A and LINE B images for the following purposes.
  — To adjust the horizontal center (page 37) and white balance (page 39)
  — To generate a digital effect to an image when switching the images of same signal
  — Only 1 player is connected.

Selecting the Switching Effect

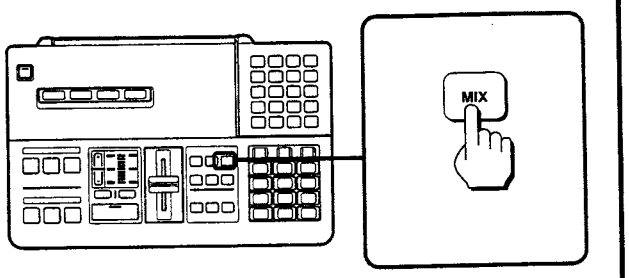
You can enjoy switching the images with the monotone, mosaic, and bit defect effects.
Further, you can fade and wipe the images.
The overlapping duration corresponds to the switching speed.

You may be interested in generating a digital effect such as multi picture and afterimage. These digital effects are explained in the "Advanced Operations" chapter (page 30).

Mixing the Overlapped Images

You can switch the overlapped images.

Press MIX to turn it on.



Note on the MIX SELECT VIDEO and WIPE SELECT buttons

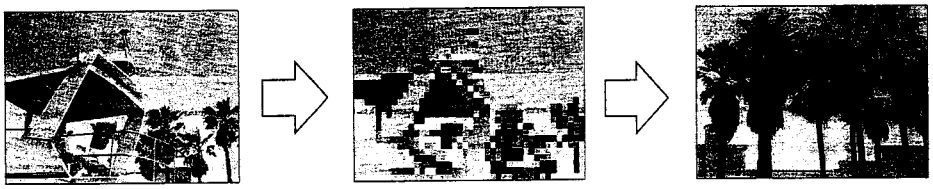
Make sure that the only MIX button of the MIX SELECT VIDEO and WIPE SELECT sections is lit. If another button is lit, the effect of the button is included. To turn off the button, press it.

Mixing the Images with the Switching Effects

You can make the images monotone, mosaic, or bit defect while switching them. The current image takes on the effect and switches to another image. The latter image appears with the selected effect and becomes normal.

Monotone mix

Mosaic mix



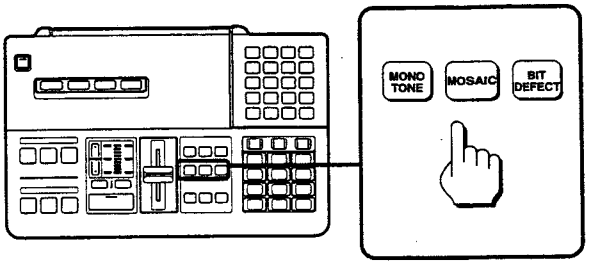
Bit defect mix

Press to turn on the button of the effect you want.
The MIX button also lights automatically.

MONOTONE .....To make monotone mix

MOSAIC .....To make mosaic mix

BIT DEFECT .....To make bit defect mix



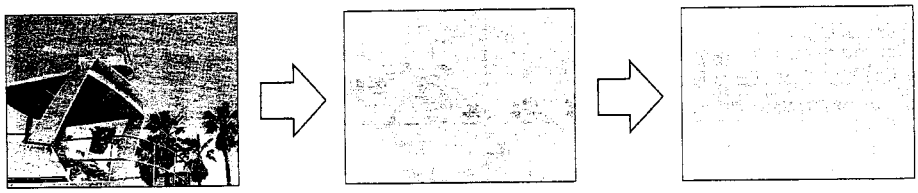
BIT DEFECT image
To digitally process the analog luminance level which is continuous from low to high, the digital SEG encodes the luminance into 256 levels so that the image will look the same and normal as the original when decoded. The 256 levels equal 8 bits of processing circuit. To make the BIT DEFECT image, the digital SEG switches the processing circuit to 4, 3, 2 bits and thereby breaks the luminance level down into 16, 8, and 4 levels.

Fading the Image In or Out

You can fade out a image to white or black, and fade in a image from white or black.

White fade

Black fade



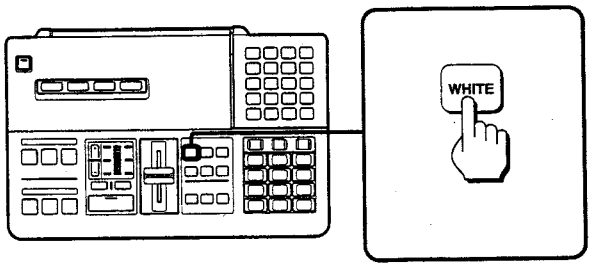
When you select an image using the switching lever with the fading effect, the other image turns into the white or black screen. For example, when you select the LINE A image, the LINE B image turns into the black or white screen.

Notes on the indication

- The INPUT SELECT button of the signal which turns into the black or white screen flashes.
- Check that the image you want is selected by the image position indicator. To select the image, move the switching lever toward the image you want.

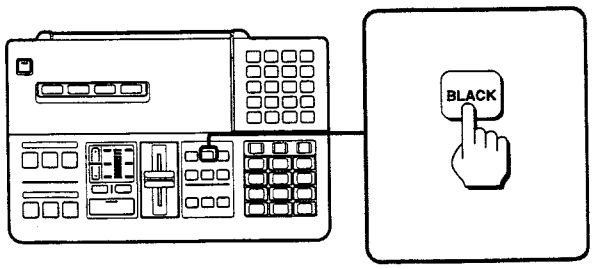
White fade

Press WHITE to turn it on.
Make sure that MIX is lit. If it is not lit, press MIX to turn it on



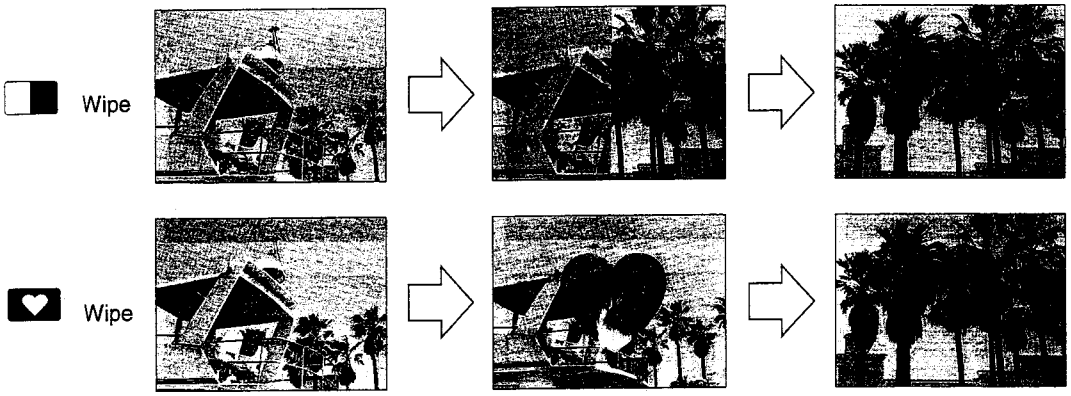
Black fade

Press BLACK to turn it on.
Make sure that MIX is lit. If it is not lit, press MIX to turn it on



Wiping

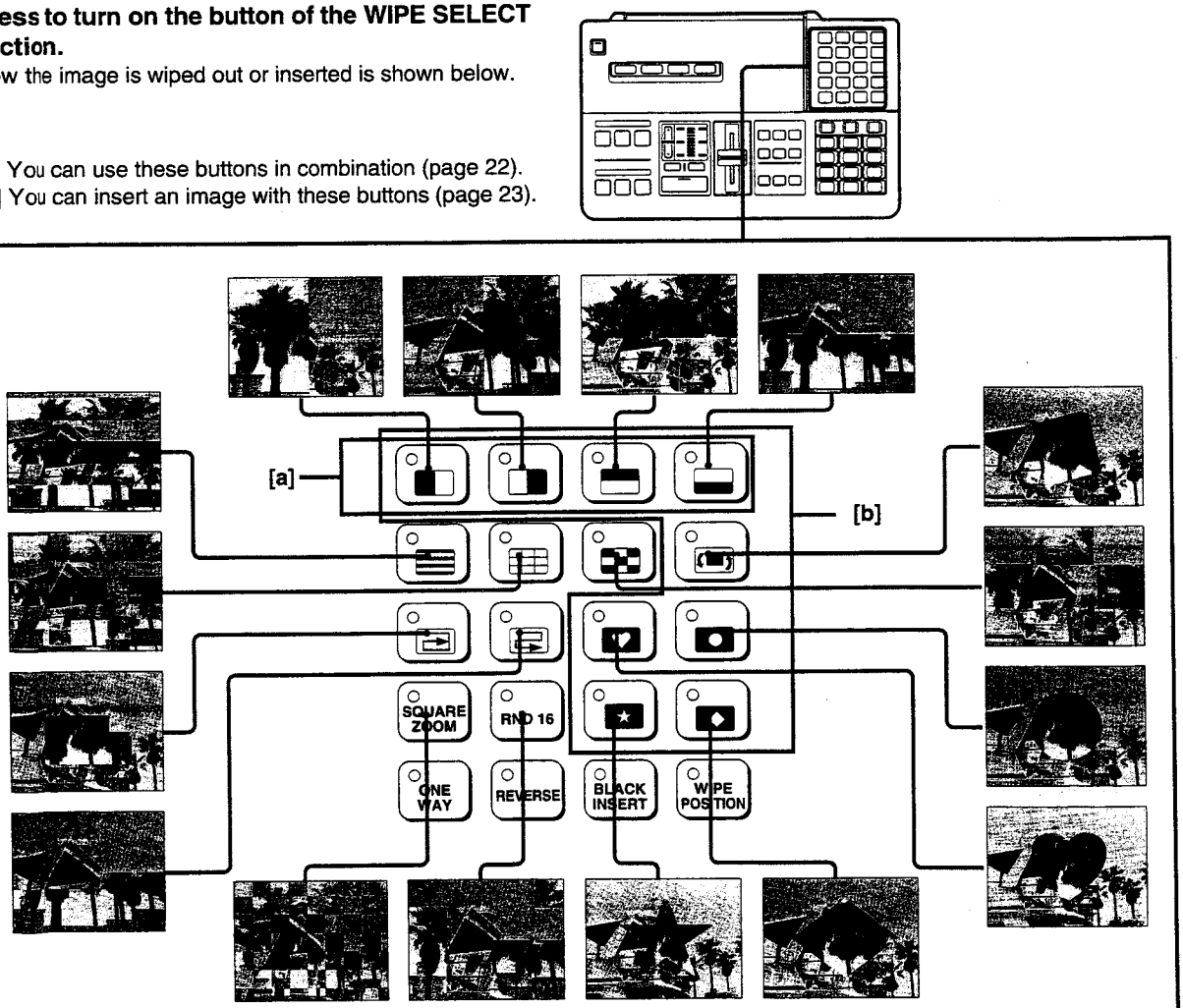
You can switch to another image or black screen by wiping out the current image. Also you can insert an image into another image using some of the WIPE SELECT buttons.



Selecting the Wiping Pattern

Press to turn on the button of the WIPE SELECT section.
How the image is wiped out or inserted is shown below.

[a] You can use these buttons in combination (page 22).
[b] You can insert an image with these buttons (page 23).



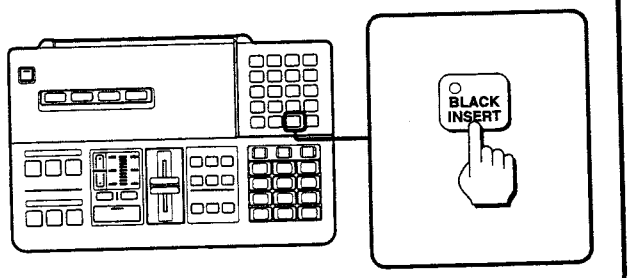
Note to obtain the wiping pattern you want

If another button of the WIPE SELECT section is lit, turn off the button you do not want by pressing it.
If you leave some buttons lit, the wiping will be performed as the combined patterns.
If you press a button which cannot be combined, the pattern of the pressed button replaces the previously lit button.

Supplementary Effect for Wiping

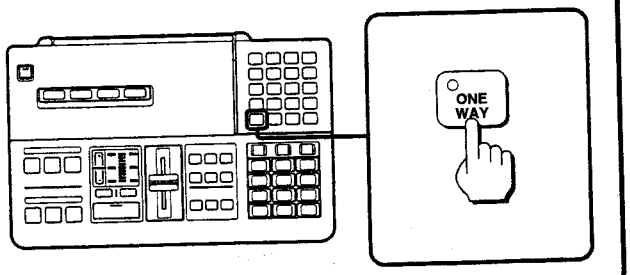
To insert a black portion between the images

Press BLACK INSERT to turn it on.



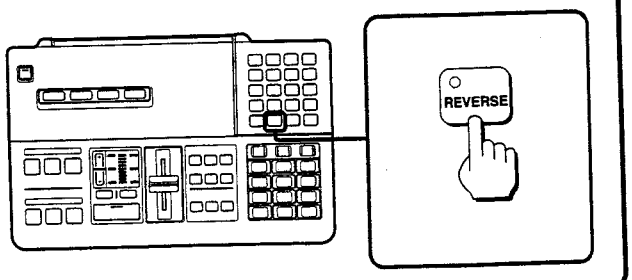
To wipe in the same direction

Press ONE WAY to turn it on.



To reverse the wiping direction

Press REVERSE to turn it on.



On the REVERSE function
The wiping direction is predetermined for each of the LINE A and LINE B images. When you want to wipe in the opposite direction, press REVERSE.

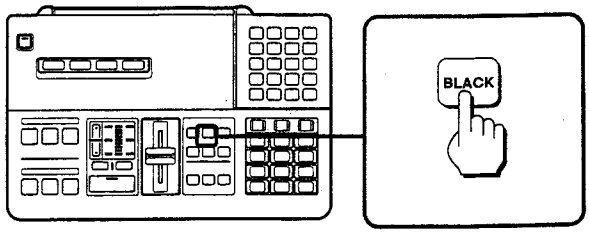
If the wipe pattern edges or image is distorted
The wipe pattern edges or image may be distorted with some monitors. (This does not affect the recorded image.) The distortion may be reduced by turning down the brightness of the monitor.

Wiping

To wipe to black screen

Press BLACK to turn it on.

You cannot wipe to white screen.



Notes on the indication

- The INPUT SELECT button of the signal which turns into the black screen flashes.
- Check that the image you want is selected by the image position indicator. To select the image, move the switching lever toward the image you want.

To turn off all the WIPE SELECT buttons

Press MIX of the MIX SELECT VIDEO section.

The Combination of the Wipe Patterns

The 15 wiping patterns are available by combining the patterns of top row.

Example of the wipe patterns

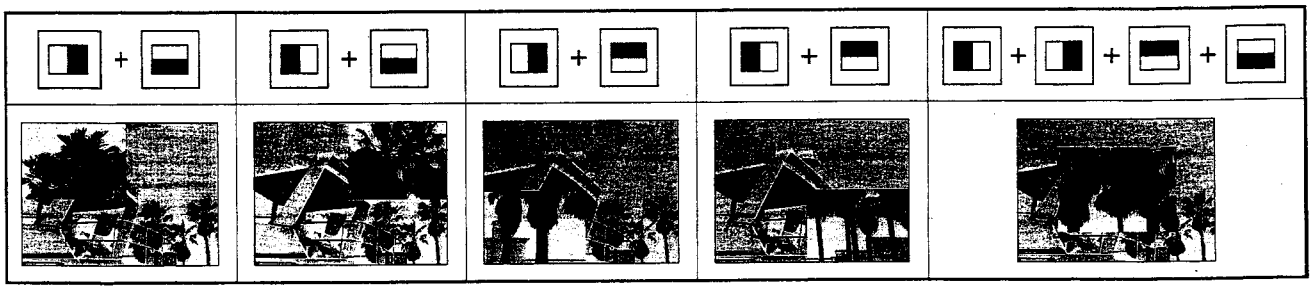


Table of the available wipe patterns

○ ··· Button to be lit

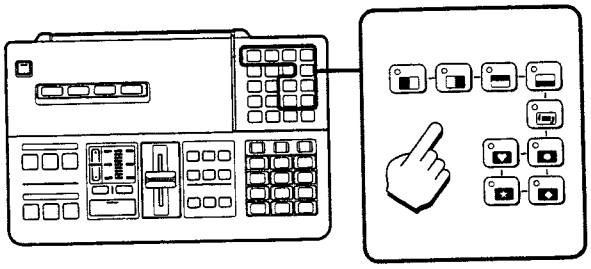
Button \ Pattern															
	○				○	○	○				○	○	○		○
		○			○			○	○		○	○		○	○
			○			○		○		○	○		○	○	○
				○			○		○	○		○	○	○	○

Inserting an Image into Another Image

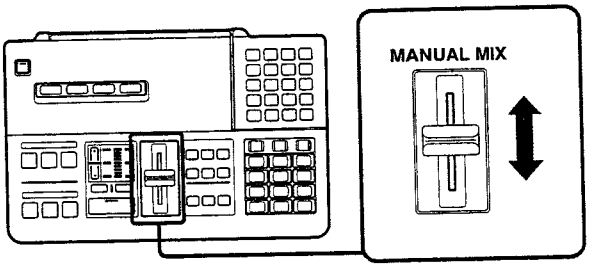
You can insert an image into another image at the position you want.

To insert an image at the center

1 **Select the pattern.**



2 **Move the switching lever until the inserted image becomes the size you want.**
The image wipes in from the center.
If you want to change the position of the pattern, see page 24.



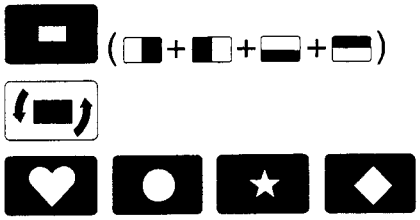
To switch the image

Move the switching lever in the direction which the image you want takes place.

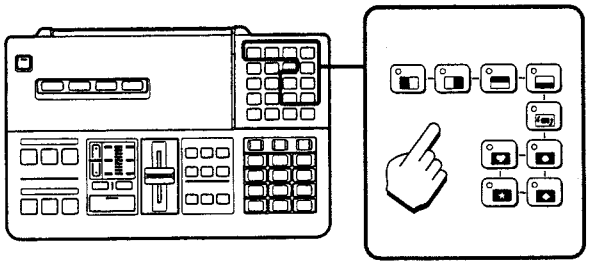
To change the position of the pattern

The image wipes in from the center. You can change the position of the image using WIPE POSITION and the 1 to 9 buttons.

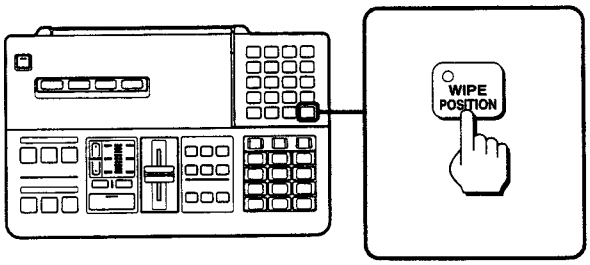
The pattern you can use with WIPE POSITION



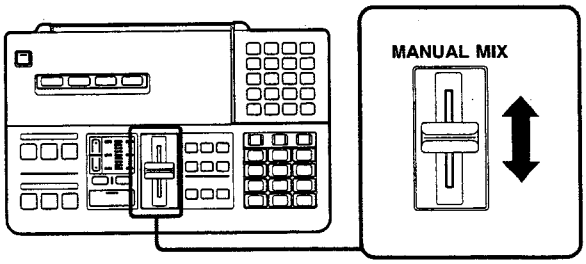
1 **Select the pattern.**



2 **Press WIPE POSITION to turn it on.**
The 1 to 9 buttons light up automatically.



3 **Move the switching lever until the inserted image becomes the size you want.**

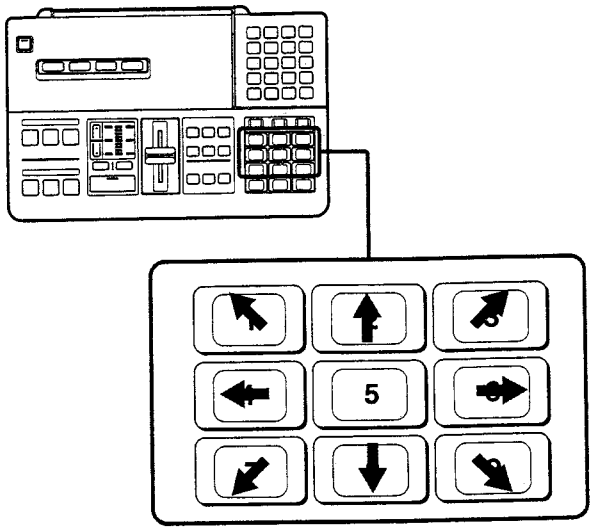


4 Move the pattern by pressing the 1 to 9 buttons.

To move the pattern continuously, keep the button pressed.

Pressing the each button moves the inserted image:

1 toward top left
2 upward
3 toward top right
4 toward left
5 back to the center
6 toward right
7 toward bottom left
8 downward
9 toward bottom right



If you change the wipe pattern after you set the position

- If you select one of the patterns which can be used with WIPE POSITION, the position does not change.
- If you select a pattern which cannot be used with WIPE POSITION, the pattern appears at the center.

Note on the pattern size

When you turn on or off WIPE POSITION, the pattern size chages.

Note on the position setting

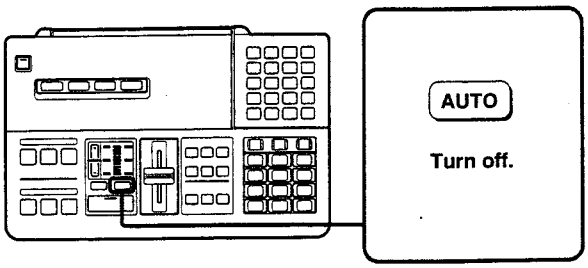
If you want to make the inserted image appear at a particular position, store the position in program memory (page 43).

Switching the Images

After you select the signals for the LINE A and LINE B images, you switch the images manually moving the switching lever up and down.

When you want to switch the images in automatic mode, see page 27.

1 **Make sure that the AUTO button is not lit. If it is, press AUTO to turn it off.**



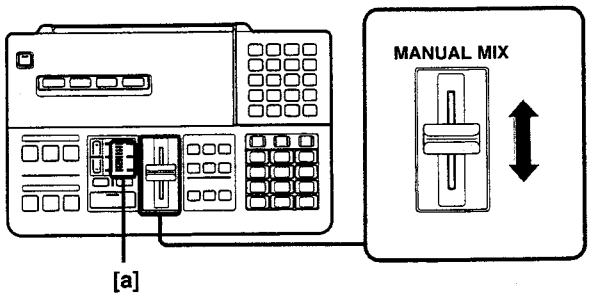
2 **Move the switching lever when you want to switch the images.**

As you move the switching lever, the images switches from LINE A to LINE B or from LINE B to LINE A.

To switch the images slowly, move the switching lever slowly.

To switch the images quickly, move the switching lever quickly.

[a] The indicator lights up showing how far the switching of the images has proceeded.



Advanced Operations

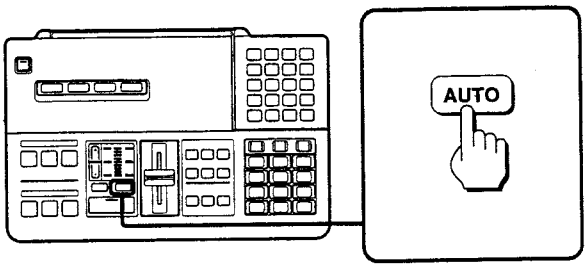
In this chapter, we explain:

- how to switch the images in automatic mode
- how to select an audio signal
- how to generate a digital effect
- how to adjust the the video picture and audio volume
- how to store and use the effect program in memory
- about controlling the digital SEG from editing controller
- about the other functions available with the OPTION button.

Switching the Images in Automatic Mode

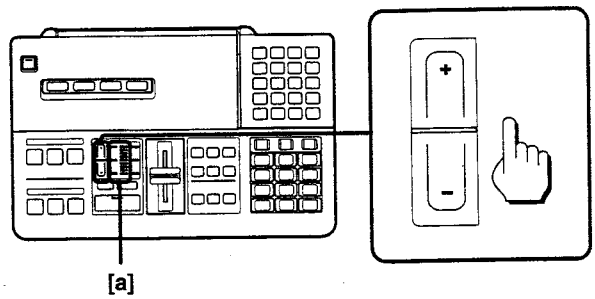
Once you set the digital SEG in automatic mode, you only need to press the START button to switch the images.

1 **Press AUTO to turn it on.**
The digital SEG enters automatic mode.



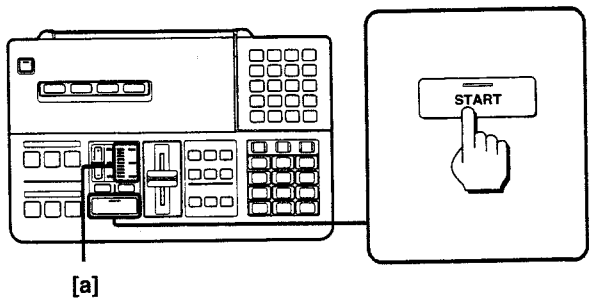
2 **Press + or – to set the switching speed.**
"+" to make the switching speed fast.
"–" to make the switching speed slow.

[a] The indicator lights up showing the speed level you set.



3 **Press START when you want to switch the images.**
The image switches from one to another with the effect you selected.

[a] The indicator lights up showing how far the switching of the images has proceeded.



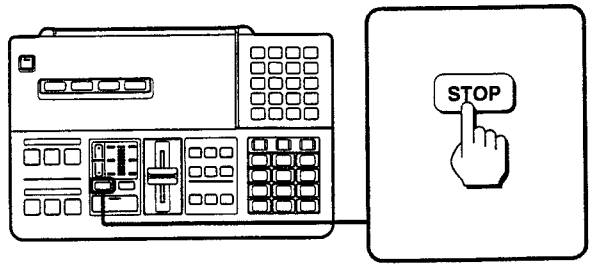
Note on the SPEED/POSITION indicator

When you set the switching speed, the indicator shows the speed level. When you switch the images, it shows the image position.

Switching the Images in Automatic Mode

To stop while switching the images

Press STOP.
When the images switches from LINE A to LINE B, the LINE B of the POSITION lamp and the START button flash.
When the images switches from LINE B to LINE A, the LINE A of the POSITION lamp and the START button flash.
To resume switching, press START.



To return to manual switching mode

Press AUTO to turn it off.

Note

If you move the switching lever several times in auto mode, the digital SEG enters manual mode.

Selecting the Audio Signal

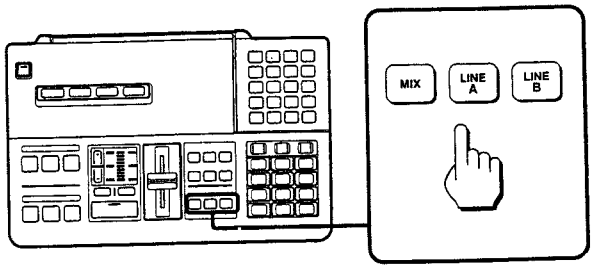
When you turn on the digital SEG, the MIX button of the MIX SELECT AUDIO section lights up and the sound switches as the image switches.

Press to turn on the button of the MIX SELECT AUDIO section.

MIX ..... To switch the sound of the LINE A and LINE B signals as the image switches.

LINE A ... To keep the sound of the LINE A image regardless of the image switching.

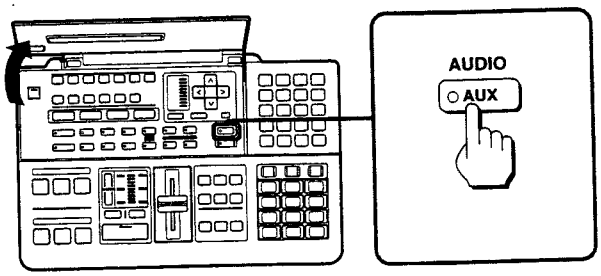
LINE B ... To keep the sound of the LINE B image regardless of the image switching.



To mix with the sound of audio equipment

1 **Press AUDIO AUX under the cover to turn it on.**

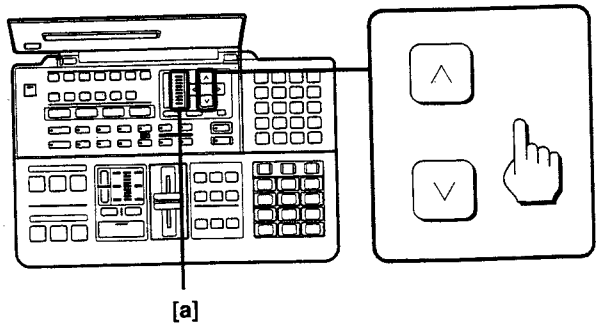
The ∧ and ∨ buttons also light up.



2 **Adjust the balance by pressing ∧ or ∨ .**

∧ to increase the volume of the audio equipment.

∨ to increase the volume of the LINE signal.



[a] The indicator shows the adjustment level.

To return to the initial condition

Press RESET.

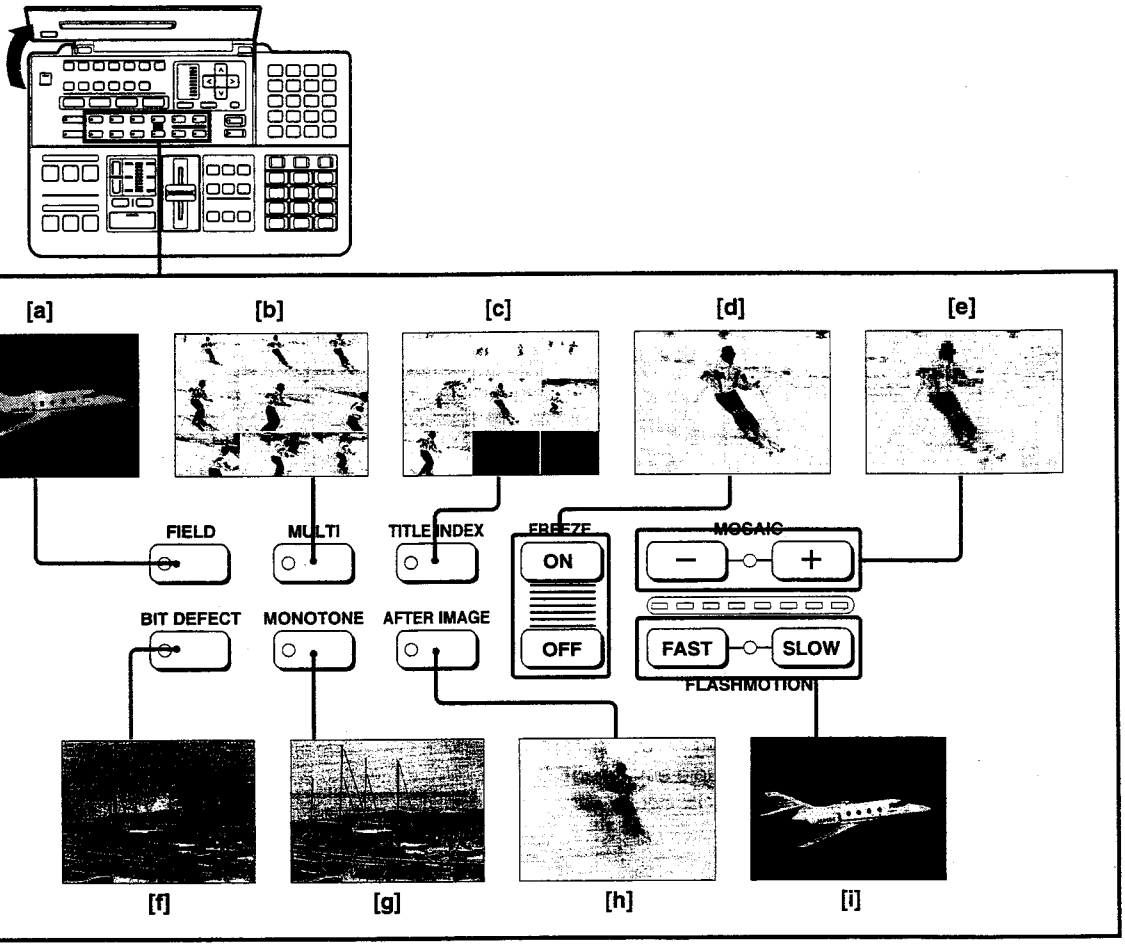
Note

You can store the AUDIO AUX adjustment in an A/V ADJ. MEMORY button. See page 41 for storing operation.

Generating the Digital Effect

You can change the appearance of either one image or both images by generating digital effects such as mosaic, multi-picture and afterimage using the DIGITAL EFFECT buttons under the cover. You can combine some effects.

The Digital Effects You Can Generate



[a] FIELD effect
The image becomes the field picture.

[b] MULTI (multi picture) effect
The screen is divided into 9 screens.

[c] TITLE INDEX effect
When you press TITLE INDEX, the screen is divided into 9 screens, but an image appears only in the top left screen. Press TITLE INDEX when you want the image to stop. The image in the first screen becomes still and the playback image appears in the next screen. Each time you press TITLE INDEX, the image in the screen becomes still and the playback image appears in the following screen.

[d] FREEZE effect
To freeze the image, press ON.
Press again to freeze another image.
To return to the normal image, press OFF.

[e] MOSAIC effect
To make the mosaic pieces larger, press + until the mosaic pieces becomes the size you want.
To make the mosaic pieces smaller, press – until the mosaic pieces become the size you want.

[f] BIT DEFECT effect
The image becomes bit-defected. (See page 18.)

[g] MONOTONE effect
The image becomes monotone.

[h] AFTERIMAGE effect
The afterimage effect is generated.

[i] FLASHMOTION effect
To make the flashing intervals faster, press FAST until the intervals become as fast as you want.
To make the flashing intervals slower, press SLOW until the intervals become as slow as you want.

Note on the image you can generate a digital effect

It is not possible to generate a digital effect to the LINE A image and a different digital effect to the LINE B image.

Note on the MULTI, TITLE INDEX, MOSAIC and FLASHMOTION

When you select the MULTI, TITLE INDEX, MOSAIC, and FLASHMOTION effects, the field image is used and the FIELD button lights up automatically. You cannot obtain these effects with the frame image.

When using the MULTI and TITLE INDEX

The image may become noisy.

When using the MULTI and TITLE INDEX with the wipe patterns

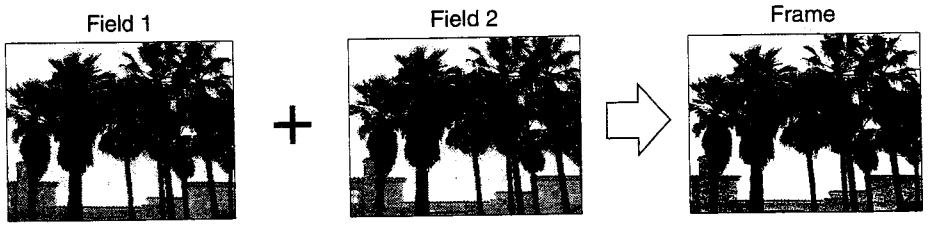
You cannot exactly align the frames of MULTI and TITLE INDEX images with the wipe patterns. To align them as close as possible, adjust the horizontal center and move the images (page 37).

What is a "field"?

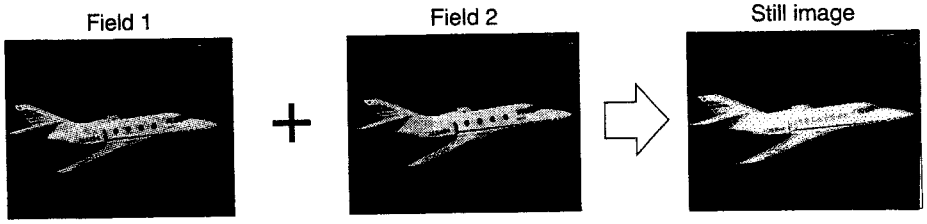
The image you usually see on a TV or monitor is called a "frame".
The "frame" is made of two pictures called "fields" **[a]**.
When a scene has lots of movement, the two fields of the frame are different from each other. Consequently, if the frame is used as the still image, you will see a double image **[b]**.

By making a still image of the field, you can obtain a stable image without a double image, though the image quality becomes slightly rough **[c]**.

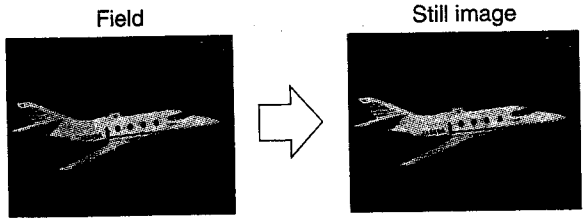
[a] Usual image



[b] Still image made of a frame



[c] Still image made of a field



Generating the Digital Effect on a Signal

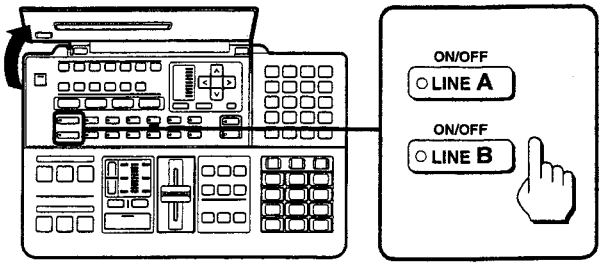
1 **Press to turn on the button of the image to select the image.**

LINE A ..... To generate an effect on the LINE A image.

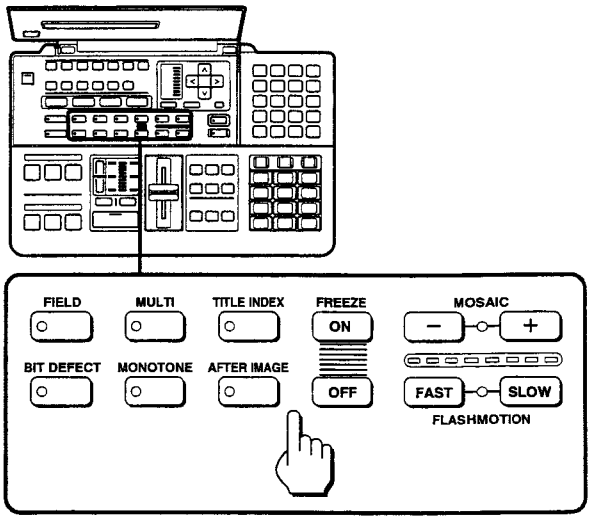
LINE B ..... To generate an effect on the LINE B image.

LINE A and LINE B .... To generate an effect on both images.

When you do not want to generate the effect on the image, press the button to turn it off.

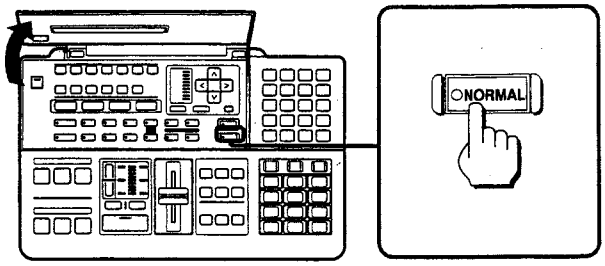


2 **Press the button of the effect you want.**



To return to the normal image

Press NORMAL.



The Digital Effects You Can Use in Combination

The table below shows the effects you can use in combination.
○···· You can use in combination.
× ···· You cannot use in combination. The effect of the button you pressed later takes place.

	Field				Field or Frame			
Button lit / Button to be pressed	MOSAIC	MULTI	TITLE INDEX	FLASH-MOTION	FREEZE	BIT DEFECT	MONOTONE	AFTER-IMAGE
MOSAIC		×	×	○	○	○	○	×
MULTI	×		×	○	×	○	○	×
TITLE INDEX	×	×		○	×	○	○	×
FLASHMOTION	○	○	○		×	○	○	○
FREEZE	○	○	○	×		○	○	×
BIT DEFECT	○	○	○	○	○		○	○
MONOTONE	○	○	○	○	○	○		○
AFTERIMAGE	×	×	×	○	×	○	○	

To change the speed of the multi picture motion

1 **Press MULTI to turn it on.**

2 **Adjust the speed by FLASHMOTION FAST/SLOW.**

Adjusting the Video Picture and Audio Volume

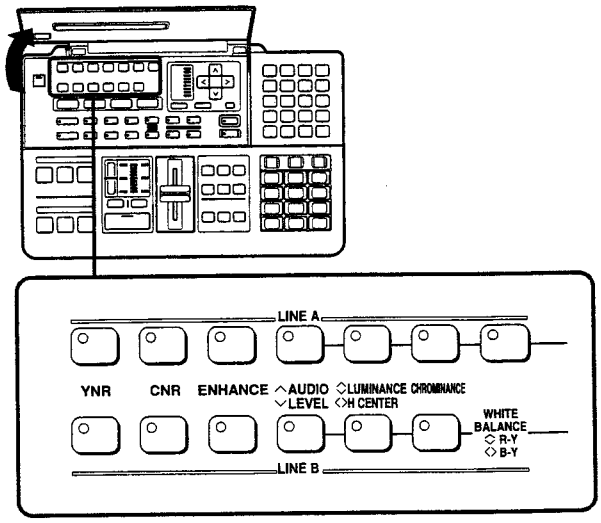
You can adjust the video picture and audio volume of the LINE A and LINE B signals independently. By storing the adjustment in the A/V adjustment memory, you can recall the adjustment with one push of the A/V ADJ. MEMORY button.

Note

Before you start adjusting, make sure that you display the signal you want to adjust on the monitor.

The buttons to adjust the video picture and audio volume

The buttons of the upper row are for adjusting the LINE A signal, and those of the lower row are for adjusting the LINE B signal.

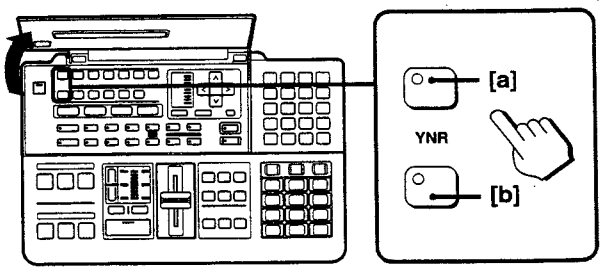


Reducing the Luminance Noise

Luminance noise will be reduced.

Press YNR to turn it on.
To return to the normal image, press YNR to turn it off.

[a] For LINE A image
[b] For LINE B image

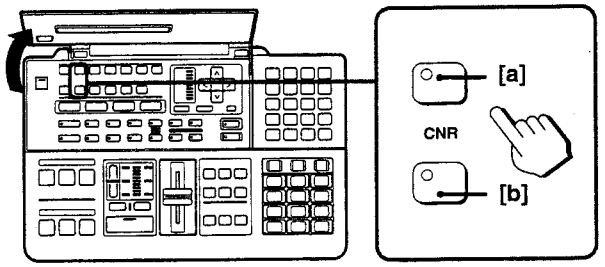


Reducing the Chrominance Noise

The color variance will be reduced.

Press CNR to turn it on.
To return to the normal image, press CNR to turn it off.

[a] For LINE A image
[b] For LINE B image

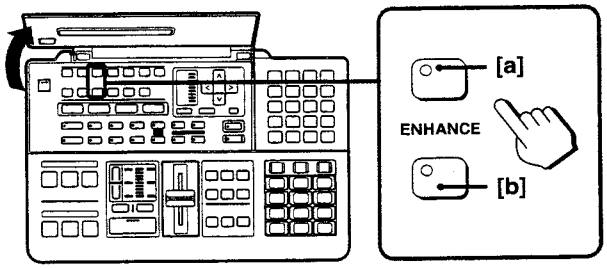


Enhancing the Contours

The contours will become sharp.

Press ENHANCE to turn it on.
The return to the normal image, press ENHANCE to turn it off.

[a] For LINE A image
[b] For LINE B image



Note on the YNR, CNR and ENHANCE adjustments

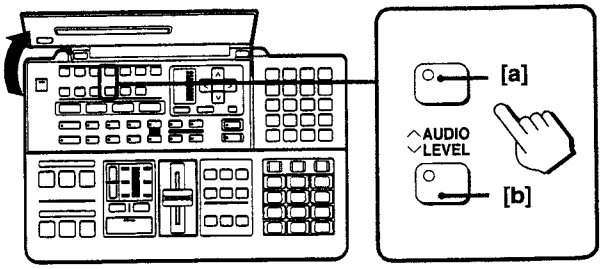
You may not be able to recognize the effect of the adjustment with some images.

Adjusting the Audio Volume

You can adjust the audio volume of the LINE A and LINE B signals.

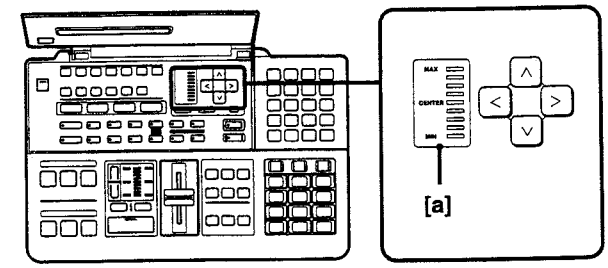
1 **Press AUDIO LEVEL to turn it on.**
The ∧ and ∨ buttons light up automatically.

[a] For LINE A image
[b] For LINE B image



2 **Adjust the volume by pressing ∧ or ∨ .**
∧ ····· to increase the volume.
∨ ····· to decrease the volume.

[a] The indicator shows the adjustment level.

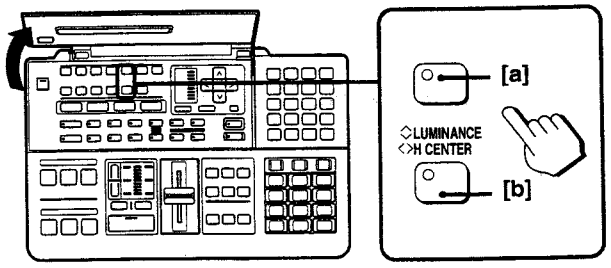


Adjusting the Luminance

If the luminance level is unsatisfactory, make this adjustment.

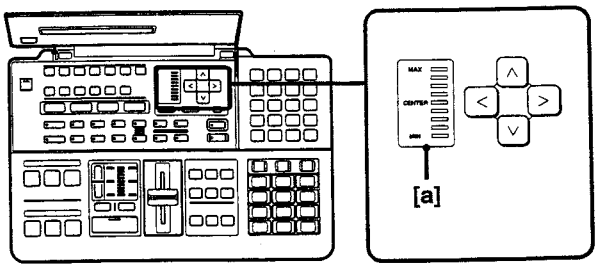
1 **Press LUMINANCE/H CENTER to turn it on.**
The ∧ and ∨ buttons light up automatically.

[a] For LINE A image
[b] For LINE B image



2 **Adjust the luminance level by pressing ∧ or ∨ .**
∧ ····· to increase the luminance level.
∨ ····· to decrease the luminance level.

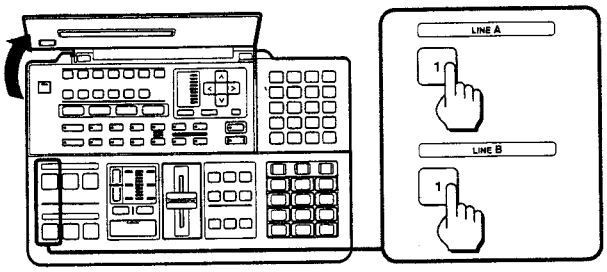
[a] The indicator shows the adjustment level.



Adjusting the Horizontal Center

If the image appears off the center in the horizontal direction, make this adjustment.

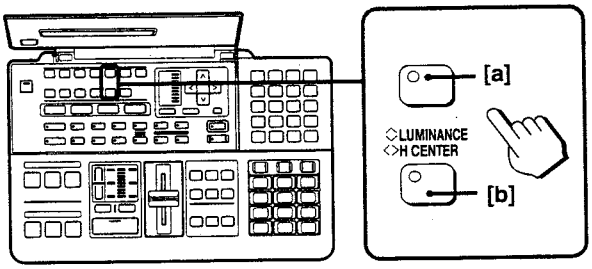
1 **Select the same signal for the LINE A and LINE B images.**
For example, select the signal input to the INPUT 1 jacks.



2 **Mix the LINE A and LINE B images using the ▬ wipe pattern (page 20).**

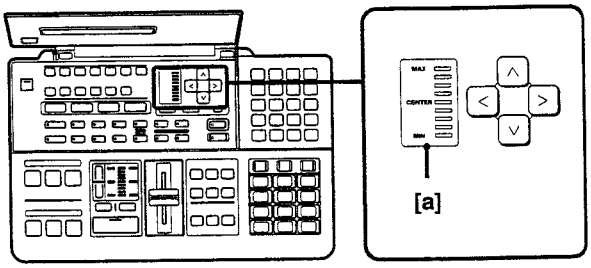
[a] LINE A image
[b] LINE B image

3 **Press LUMINANCE/H CENTER.**
The ∧ and ∨ buttons light up automatically.



[a] For LINE A image
[b] For LINE B image

4 **Adjust the horizontal center by pressing < or >.**
< ..... To move the image towards the left
> ..... To move the image towards the right



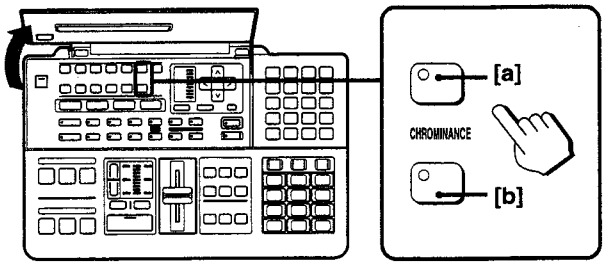
[a] The indicator shows the adjustment level.

Adjusting the Color Intensity (Chrominance)

If the color intensity is unsatisfactory, make this adjustment.

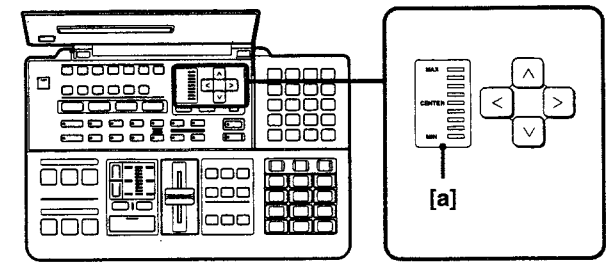
1 **Press CHROMINANCE to turn it on.**
The ∧ and ∨ buttons light up automatically.

[a] For LINE A image
[b] For LINE B image



2 **Adjust the color intensity by pressing ∧ or ∨.**
∧ ····For more color intensity
∨ ····For less color intensity

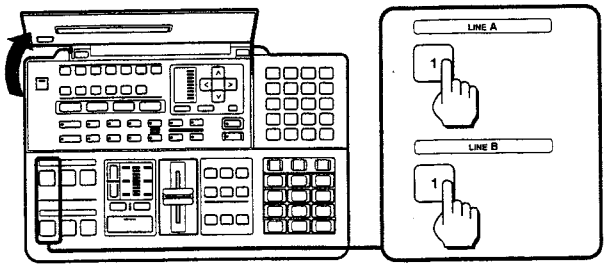
[a] The indicator shows the adjustment level.



Adjusting the White Balance

If the color balance of the image is incorrect, make this adjustment. You adjust the white balance of the LINE A signal to that of the LINE B signal.

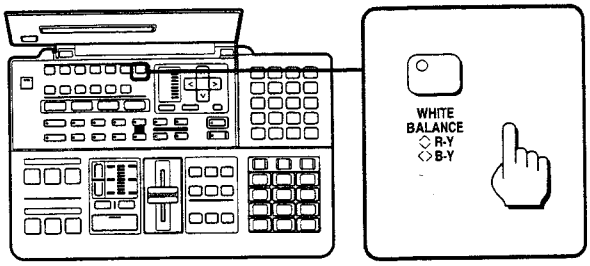
1 **Select the same signal for the LINE A and LINE B images.**
For example, select the signal input to the INPUT 1 jacks.



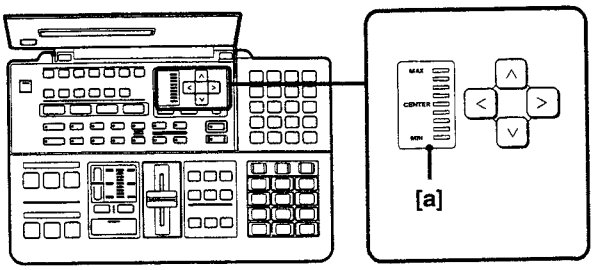
2 **Mix the LINE A and LINE B image using one of the wipe patterns of the top row (page 20).**

[a] LINE A image
[b] LINE B image

3 **Press WHITE BALANCE to turn it on.**
The ∧ and ∨ buttons light up automatically.



4 **Adjust the white balance of the LINE A image to that of the LINE B image.**
∧ ..... To make the white more reddish
∨ ..... To make the white less reddish
< ..... To make the white less pale
> ..... To make the white more pale



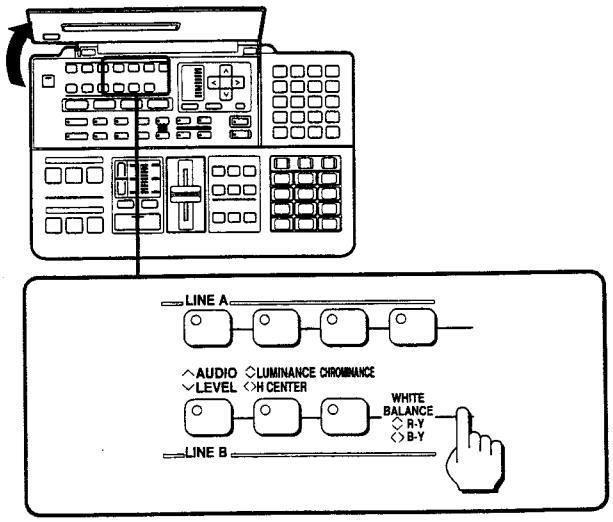
[a] The indicator shows the adjustment level.

Restoring the Initial Condition

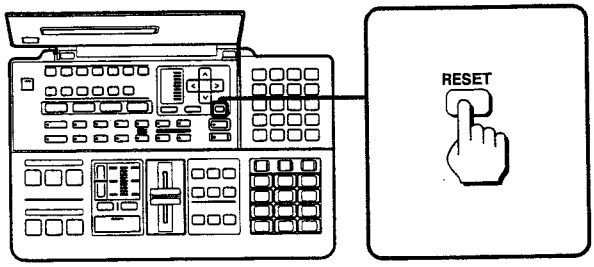
You can reset an individual item or all items to the initial condition.

To reset an individual item

1 **Press to turn on the button of the item you want to reset.**

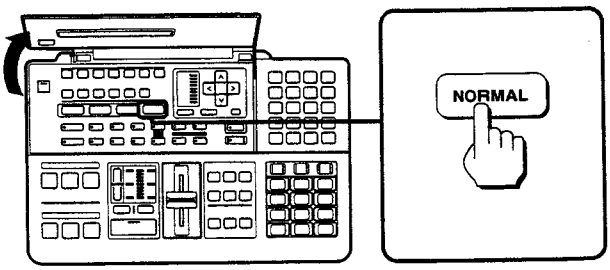


2 **Press RESET.**
The item you selected is reset to the initial condition.



To reset all items

Press NORMAL of the A/V ADJ. MEMORY section.
The video and audio you adjusted are reset to the initial condition.



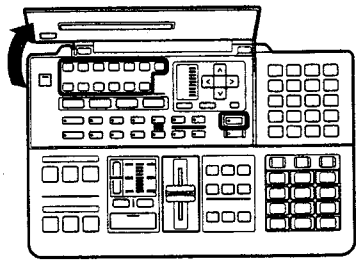
Storing the Adjustment in the Memory

You can store up to 3 sets of combination of several adjustment items in A, B and C of A/V ADJ. MEMORY buttons.
The A/V adjustment memory function enables you to adjust the image of a certain scene with one push of the A/V ADJ. MEMORY button.

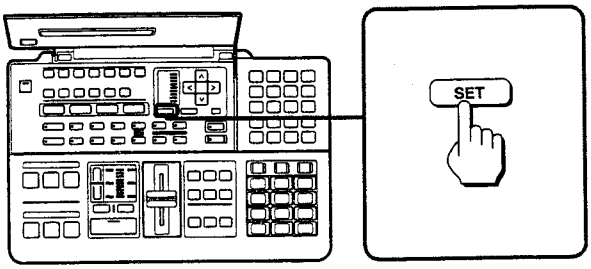
Note

If you store other adjustment in the same A/V ADJ. MEMORY button, the previous memory is erased.

1 **Adjust the items you want to store together.**
The illustration on the right shows the buttons you can use for the A/V adjustment memory.

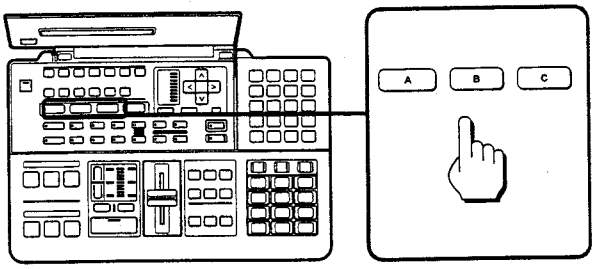


2 **Press SET to turn it on.**

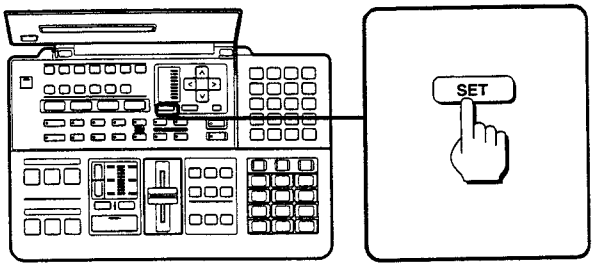


3 **Press the A/V ADJ. MEMORY button you want to store the adjustment in.**
The button flashes.

To cancel storing, press any button except SET, DEL, A, B, and C.



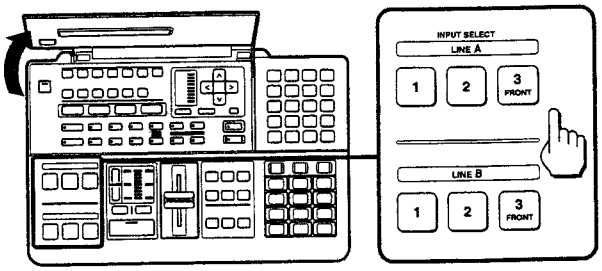
4 **Press SET to turn it off.**
The button you pressed in step 3 lights up and the adjustment you made in step 1 is stored in the button.
To store other adjustment, repeat the steps from 1 to 4.



Adjusting the Video Picture and Audio Volume

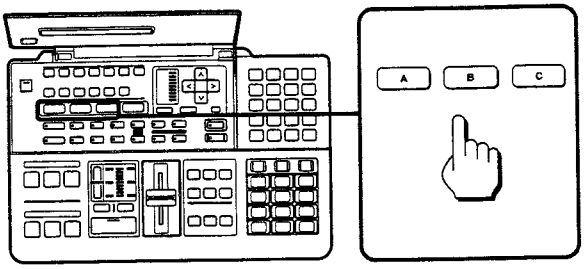
Recalling the A/V adjustment memory

1 **Select the signal you want to generate the adjustment.**



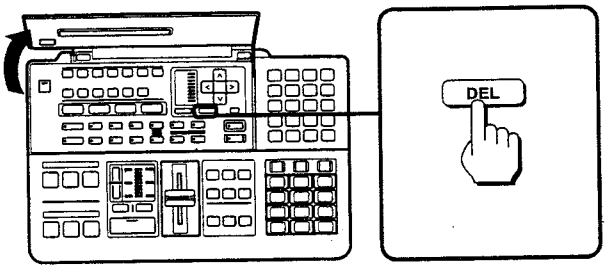
2 **Press the A/V ADJ. MEMORY button of the adjustment you want to recall.**

To check the adjustment level
Press the button of the item you want to check. The indicator lights up showing the adjustment level of the item.



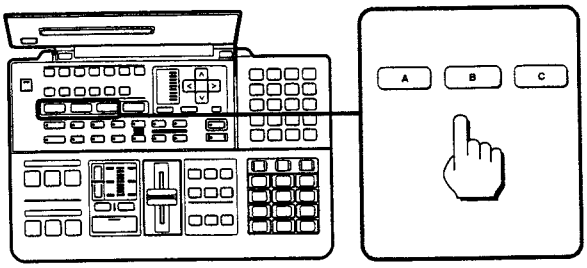
To delete the A/V adjustment memory

1 **Press DEL to turn it on.**

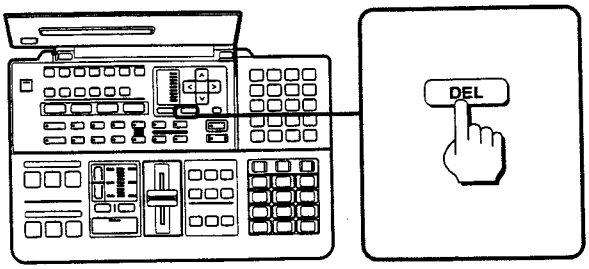


2 **Press the A/V ADJ. MEMORY button you want to delete.**
The button flashes.

To cancel deleting, press any button except SET, DEL, A, B, and C.



3 **Press DEL to turn it off.**
The flashing button turns off and the adjustment memory in the number is deleted.



Storing the Effects in the Program Memory

You can store combinations of effects in the PROGRAM MEMORY 1 to 10 and the START MEMORY buttons. The digital SEG executes the combination of the effects when you press the program number button to recall. To include the video/audio adjustment in the program memory, you need to store them in the A/V ADJ. MEMORY buttons in advance.

Steps for the program memory feature

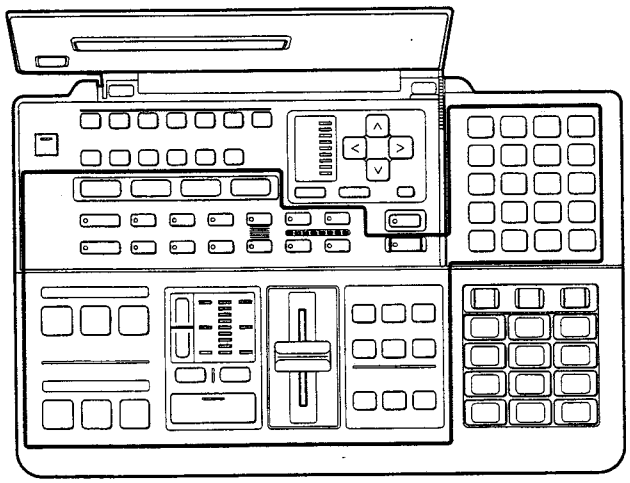
To use the program memory feature, you need to perform the following three steps.

1 **Make a combination of effects. ➡ Page 44.**

2 **Store the combination of effects in the PROGRAM MEMORY button. ➡ Page 45.**

3 **Recall and execute the program memory while you are editing or watching video. ➡ Page 46.**

The buttons you can use for the program memory



Notes on programing

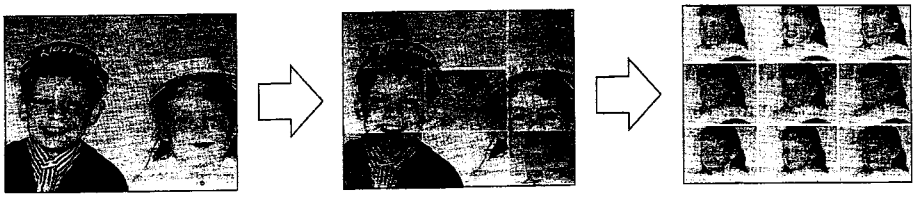
- If you store another program memory in the same button, the previous program memory is erased.
- The digital SEG memorizes the program in the form of the final destination which is the condition indicated by the lighting buttons. If the image on the monitor is in the same condition as the final destination, the image will not change even if you execute the program.
- We recommend that you store programs in the buttons in numerical order to avoid recalling wrong program memory. If you recall program memories sending a GPI signal from an editing controller (page 52), the program memories are recalled in numerical order of the PROGRAM MEMORY number buttons.

Storing the Effects in the Program Memory

Example

We explain how to use the program memory function with this example. Follow the steps for trial.

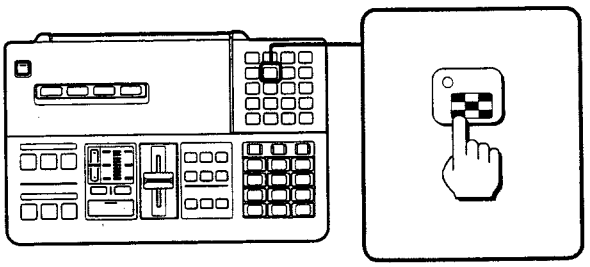
- Switch from LINE A to LINE B using the ▪ wipe pattern.
- Generate the MULTI, BIT DEFECT and MONOTONE effects on LINE B.



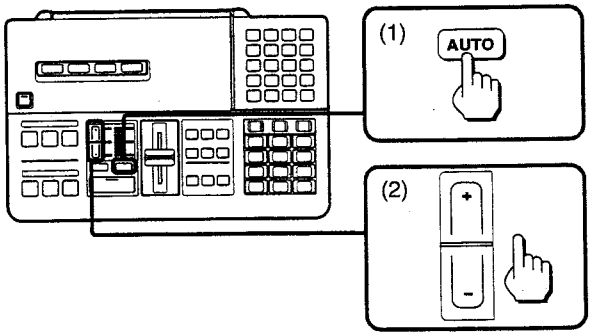
- Store in the PROGRAM MEMORY 1 button.
- Recall this program memory.

Step 1 — Making a Combination of Effects

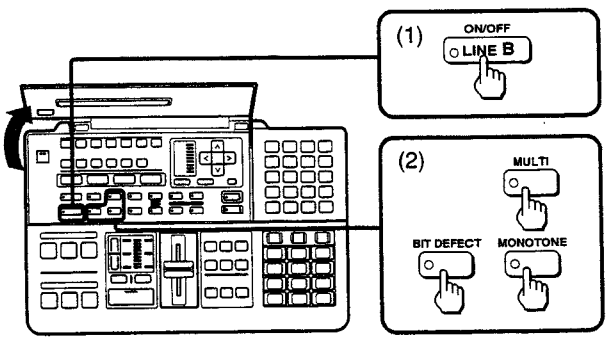
1 **Select a switching pattern.**
Press ▪ to turn it on.



2 **Adjust switching speed.**
(1) Press AUTO to turn it on.
(2) Set the speed.
See page 27 for details.

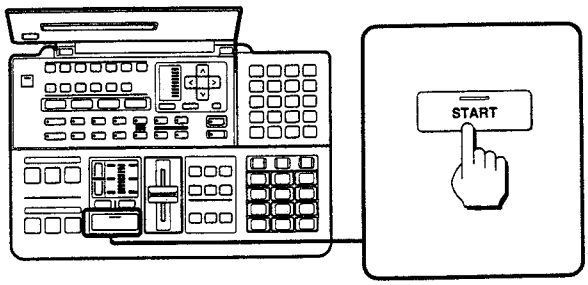


3 **Select the digital effects.**
(1) Select the image.
(2) Press to turn on the digital effect buttons.



4 **Select the image you want to switch to.**
Press START to turn on the LINE B lamp.

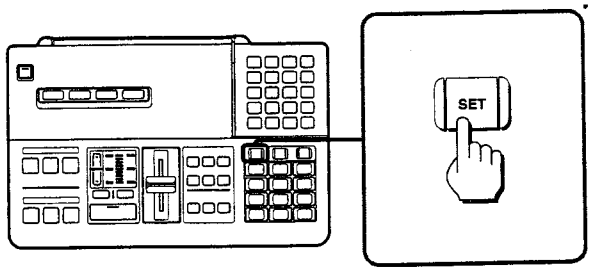
If AUTO is turned off
Move the switching lever to the LINE B side.



Step 2 — Storing the Combination of Effects

After you make a combination of effects, store it in a PROGRAM MEMORY number button.

1 **Press SET to turn it on.**
The program number buttons which have a program light up.

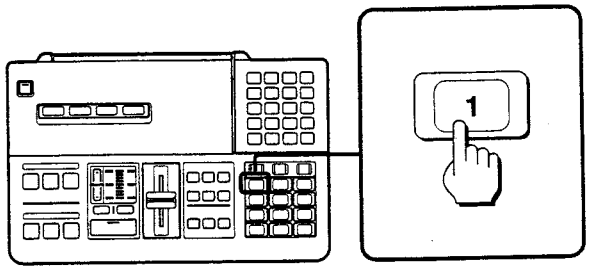


2 **Press a PROGRAM MEMORY number button.**
The program number button you pressed flashes.

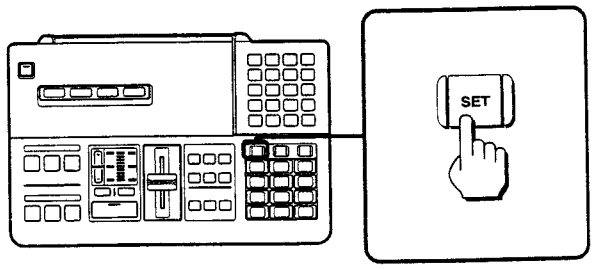
Note

If you store another program in the same button, the previous program memory is erased.

To cancel storing, press any button except the buttons of the PROGRAM MEMORY section.



3 **Press SET to turn it off.**
The program number buttons turn off and the program is stored in the program number button you pressed.

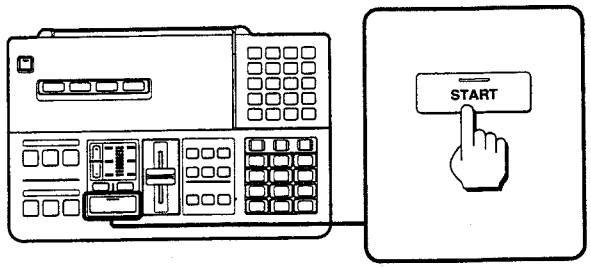


Step 3 — Recalling a Program Memory

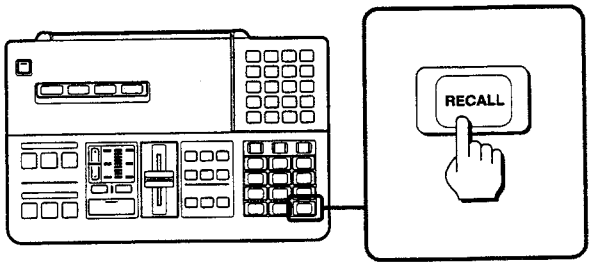
While editing or watching video, you can recall the program memories you have stored. The digital SEG executes the program memory when you press the program number button.

1 **Select the image you want to switch from.**
Press START to turn on the LINE A lamp.

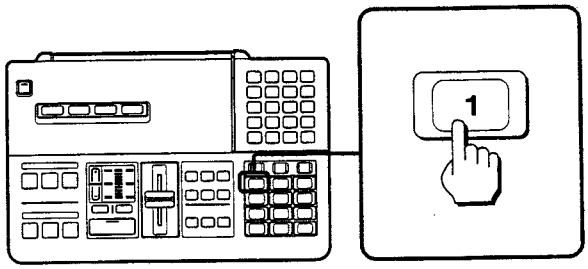
If AUTO is turned off
Move the switching lever to the LINE A side.



2 **Press RECALL to turn it on.**
The program number buttons which have a program memory light up.



3 **Press the PROGRAM MEMORY number button.**
The digital SEG executes the program memory stored in the button.
If you press a program number button which has no program memory, the button flashes.



To execute other program memories in sequence
Make sure that the RECALL button is turned on and press the program number buttons.

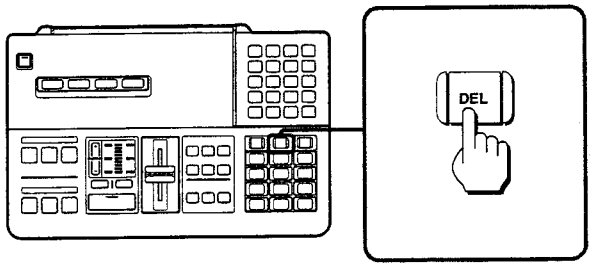
When you finish recalling the program memories
Press RECALL to turn it off.

Notes

- The digital SEG executes the program memory when you press a program number button. If you press a program number button while the digital SEG is executing another program memory, the digital SEG starts executing the program memory of the newly pressed button.
- If you recall a program memory which has a wipe pattern position (WIPE POSITION) setting, the wipe pattern immediately appears where you set. The wipe pattern moves on the screen differently from when you set the wipe position using the number buttons.

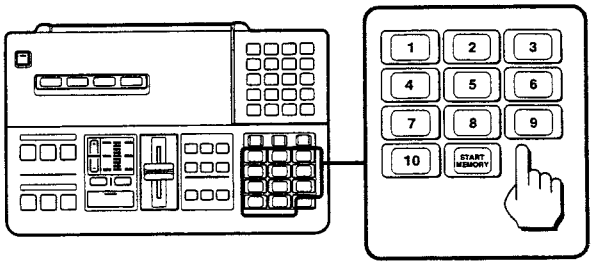
To delete a program memory

1 **Press DEL to turn it on.**
The program number and START MEMORY buttons which have a program memory light up.

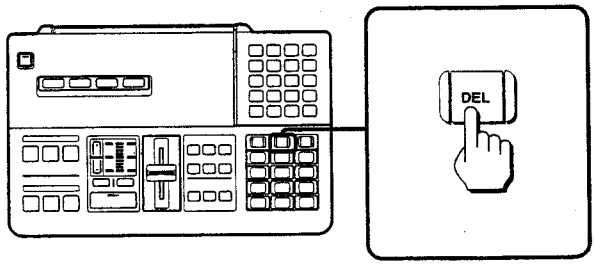


2 **Press the program number and START MEMORY button you want to delete.**
The button flashes.

To cancel deleting, press any button except the buttons of the PROGRAM MEMORY section.



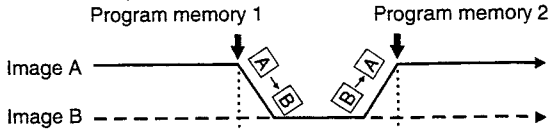
3 **Press DEL to turn it off.**
The program number and START MEMORY buttons turn off and the program in the button which has been flashing is deleted from the memory.



Take care which POSITION lamp (LINE A or LINE B) is turned on when you recall a program memory.
To switch the images using the program memory, you need to select the correct image to be switched from.

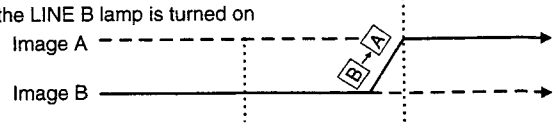
Example
Program memory 1 — The images are to be switched from LINE A to LINE B.
Program memory 2 — The images are to be switched from LINE B to LINE A.

When the LINE A lamp is turned on



Because the correct image is selected, the effect of the program memories 1 and 2 are visible.

When the LINE B lamp is turned on



Because the wrong image is selected, the effect of the program memory 1 is not visible.

If you store a condition before you recall program memories in START MEMORY, you can avoid such errors.

Storing the Effects in the Program Memory

Using the START MEMORY Button

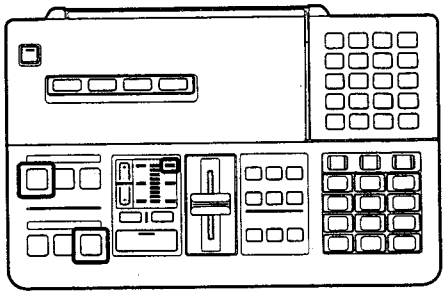
Use the START MEMORY button to store the setting of the digital SEG that you use frequently. If you store the image to be switched from, the images will be switched by the program memory as you intended.

Example

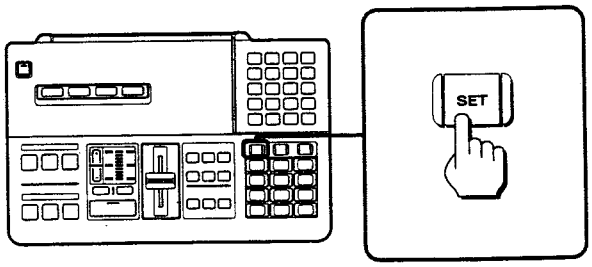
You connect a VTR to the INPUT 1 jacks and a camcorder to the INPUT 3 jacks. The images switch from LINE A to LINE B.

- Select the signal 1 for the LINE A image.
- Select the signal 3 FRONT for the LINE B image.
- Select the LINE A image position.

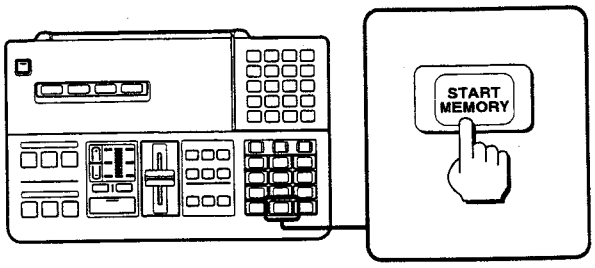
1 **Make the setting or combination of effects.**



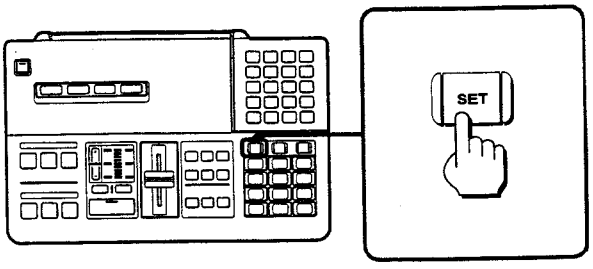
2 **Press SET to turn it on.**
The program number and START MEMORY buttons which have a program light up.



3 **Press START MEMORY.**
The START MEMORY flashes.



4 **Press SET.**
The buttons turn off and the setting or combination you made is stored in START MEMORY.



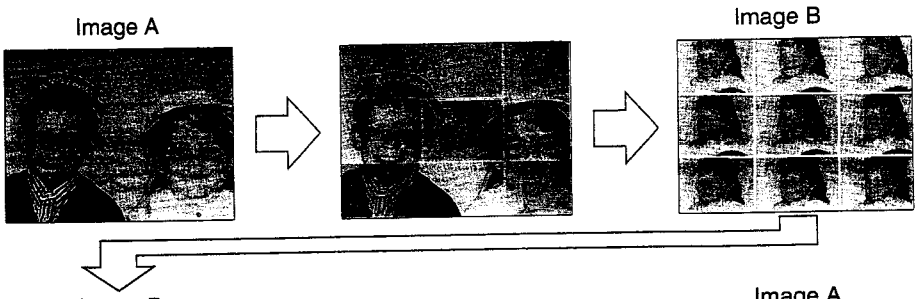
Hint for Using the Program Memories in Combination

You can make the program memory 2 adding a combination of effects to the program memory 1. In this way, you may accumulate the effects to make the other program memories.

Example of the program memories

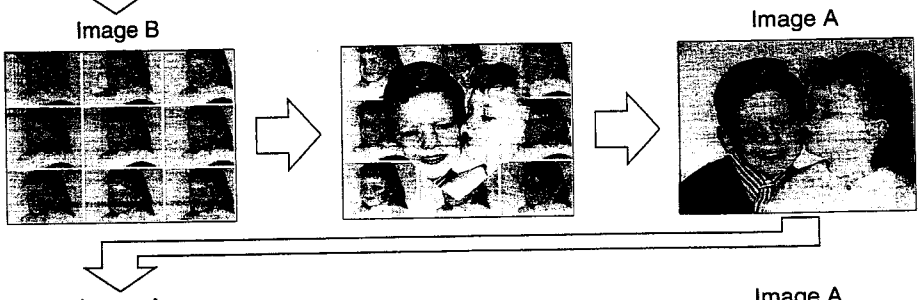
Program memory 1

wipe + digital effects



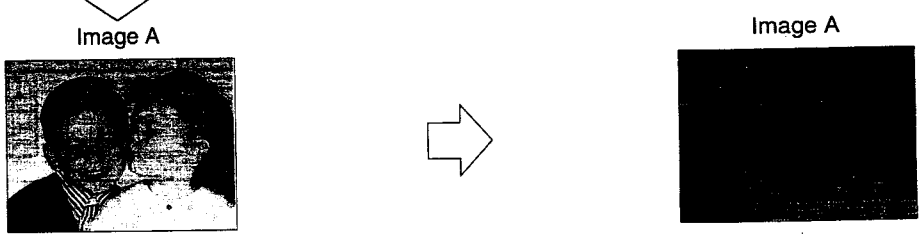
Program memory 2

wipe



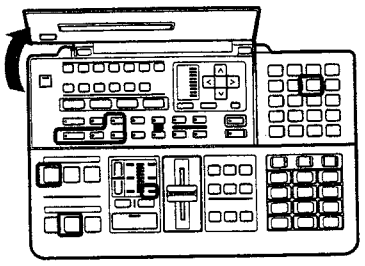
Program memory 3

White balance adjustment stored in A/V ADJ. MEMORY A



Before you make program memories, store the initial condition or the condition of a frequently used setting in the START MEMORY button. In the above example, the image may look unnatural because you adjust the white balance for the program memory 3.

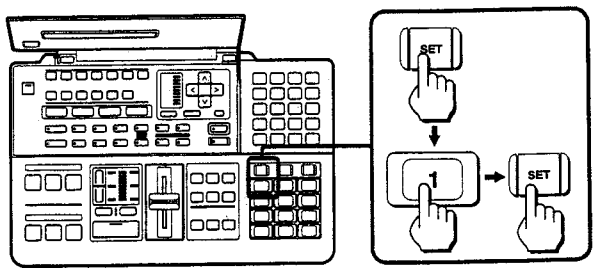
1 **Make the combination of the effects for program memory 1.**



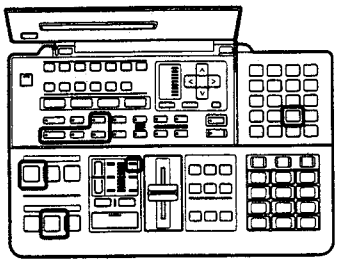
to be continued

Storing the Effects in the Program Memory

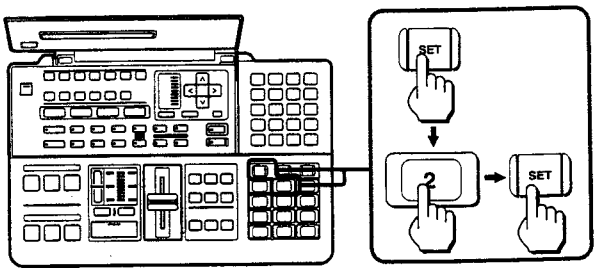
2 Store in PROGRAM MEMORY 1.



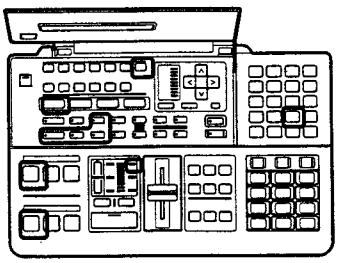
3 Make the combination of the effects for program memory 2.



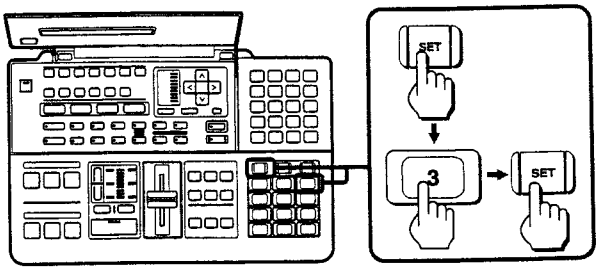
4 Store in PROGRAM MEMORY 2.



5 Make the combination of the effects for program memory 3.

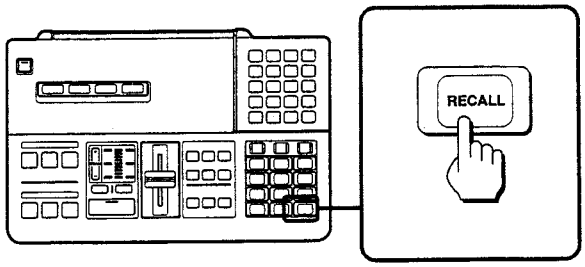


6 Store in PROGRAM MEMORY 3.

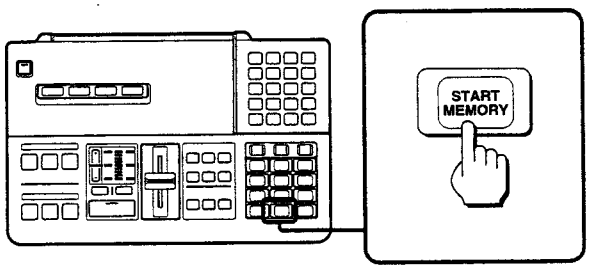


Recalling the Program Memories in Sequence

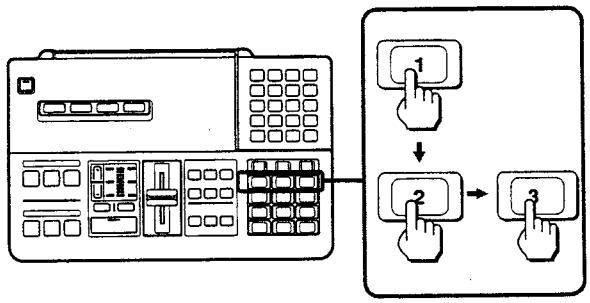
1 **Press RECALL to turn it on.**
The program number and START MEMORY buttons which have a program light up.



2 **Press START MEMORY.**



3 **Press the program number buttons when you want to execute the program memory.**



Note

The digital SEG executes a program when you press a program number button. If you press a program number button while the digital SEG is executing another program, the digital SEG starts the program of the newly pressed button.

Operating from Editing Controller

You can execute the program memories stored in the digital SEG from an editing controller having a GPI or EDIT I/F output jack such as a Sony RM-E500/E700 Video Editing Controller (not supplied).
The EDIT I/F jack is provided for future system expansion.

Notes on the EDIT I/F

- When the EDIT I/F is under control, the EDIT I/F indicator of the front panel of the main unit lights up.
- When the EDIT I/F is connected, you cannot control the digital SEG with the GPI signal.

Using Editing Controller Having a GPI Output Jack

Connect an editing controller having a GPI output jack to the GPI input jack of the digital SEG.
You can output the GPI signal* from the editing controller to call up and execute the program memories stored in the digital SEG in numerical order. You cannot change the order of the program memories.

* The GPI signal is the signal output from a video editing controller (RM-E500/E700 in this case) to control external equipment (XV-D1000 in this case) other than the video recorder/player.

To execute the program memories using the GPI signal

1 **Press RECALL to turn it on.**
The program number and START MEMORY buttons which have a program memory light up.

2 **Send the GPI signal from the editing controller.**
Each time you send the GPI signal, the digital SEG executes a program memory in numerical order from 1 to 10 repeatedly.
The number button of the program being executed flashes.
The program numbers with no programs are skipped.
The START MEMORY program is not executed.

To switch the images using the GPI signal

1 **Press RECALL to turn it off.**

2 **Press AUTO to turn it on.**

3 **Send the GPI signal from the editing controller.**
Each time you send the GPI signal, the digital SEG switches the images.

When the START MEMORY button is lit
The digital SEG executes the program memories in numerical order from 1 to 10 repeatedly.

To start from a particular program memory
Press the lighting program number button ahead of the program memory you want.
For example, to start from program number 3, press "2". The "2" button flashes and the program number 3 is executed when you send the GPI signal.

To return to the program memory 1 before all program memories are executed
Press RECALL to turn it off, then press again to turn it on.

If no PROGRAM MEMORY buttons other than the RECALL button are lit
Nothing happens even if you send the GPI signal.

Option Functions

Some of the number buttons are assigned to option functions as described below. Activate the function you want by turning the button on in option function mode.

Button	Function	Remarks
1	To demonstrate the effects generated by the digital SEG.	• OPTION lights up and [1] flashes during the demonstration. • The demonstration starts after a few seconds when you turn on the power. • To stop the demonstration, press any button of the control unit. • As long as you do not cancel the demonstration function, the digital SEG demonstrates the main effects each time you turn on the power. • The demonstration may stop if you move the switching lever several times.
2 *	To rehearse the stored program memories	The digital SEG executes the stored program memories once in numerical order starting from 1 .
3	The A/V adjustment memory in a program memory is not executed when you recall the program memory.	• The image condition becomes the setting of the A/V adjustment section. • Use this function when you change the player, and the A/V adjustment for the previous player is not effective.
4	When you turn on the power, the digital SEG enters the same condition as when it was set to standby.	• If you disconnect the AC power cord, the digital SEG enters initial condition when you connect the AC power cord again. • If there is power interruption, the digital SEG enters initial condition when power interruption is recovered.
5	To mute the beep when you press a button	The warning beeps are also muted.
6	To switch to a brighter white fader	The white level is 100 % at ON, and 75 % at OFF.
10 *	To delete all A/V adjustment and program memories	You cannot recover the deleted memories.
START MEMORY	When you connect the AC power, the digital SEG is turned on, recalls and executes the START MEMORY program.	• The function is not effective when no program is stored in the START MEMORY button. • The function is convenient when you connect the digital SEG to the interlocking outlet of an equipment. • The digital SEG starts operation when the power interruption is recovered.

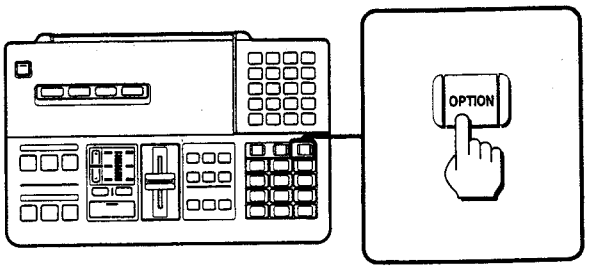
[7], [8] and [9] are not used.

* The digital SEG executes the [2] and [10] functions only once when you set them to activate. The setting is released when the digital SEG executes the function.

Option Functions

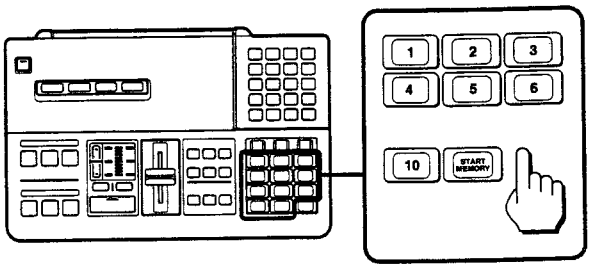
Activating the Functions

1 **Press OPTION to turn it on.**
The number buttons which have option functions and are already activated light up.

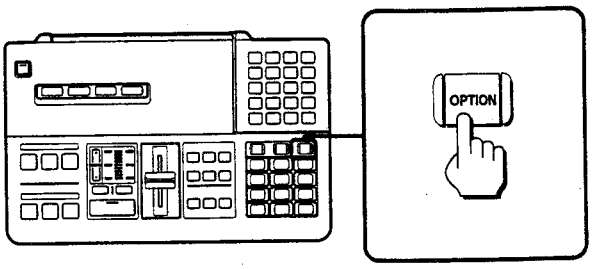


2 **Press to turn on the number button of the function you want to activate.**

To cancel the setting, press any button except the OPTION and number buttons.



3 **Press OPTION to turn it off.**



To cancel the function

1 **Press OPTION to turn it on.**

2 **Press to turn off the button of the function you want to cancel.**
To cancel the setting, press any button except the OPTION and number buttons.

3 **Press OPTION to turn it off.**

Troubleshooting

If you have a problem, go through this opearating instructions and the following list. If the problem is not included in the list, unplug the unit and contract your Sony dealer or local authorized Sony service facility.

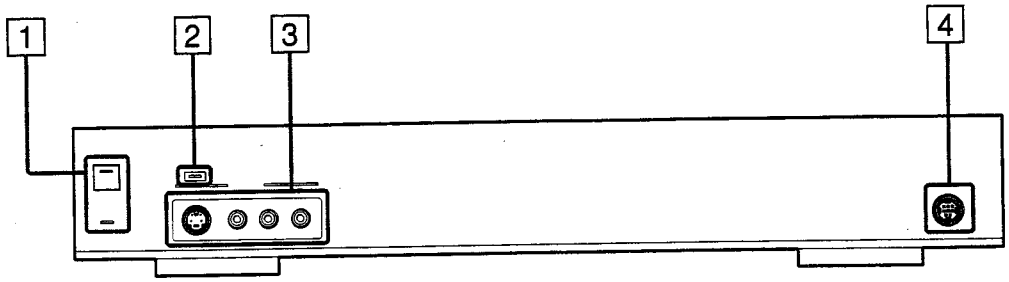
Symptom	Cause and countermeasures
No buttons of the control unit turn on even if you press the POWER switch.	• Check the power connection. • Connect the control unit to the main unit correctly.
The images switch or a digital effect is generated when you turn on the power.	The demonstration function is activated. To stop the demonstration, press any button of the control unit. To cancel the demonstration function, see page 54.
The digital SEG starts operation when you connect the AC power. It should enter standby mode.	The START MEMORY function is activated. To cancel the function, see page 54.
No picture	• Turn on the power • Connect the players and the monitor to the digital SEG correctly. • Play back the tapes.
The signal input to the video jack does not appear.	If you connect both the S video and video plugs to the same INPUT connectors, the S video signal is selected. Disconnect the S video plug.
Wrong image	Press the INPUT SELECT button of the signal you want (page 16).
The image is frozen.	• Check the tape in the player. • You pressed an INPUT SELECT button to select the input jack which no signal is input to.
Unsatisfactory image quality	Adjust the video picture (page 34).
Wrong sound	Press the MIX SELECT AUDIO button of the signal you want (page 29).
Unsatisfactory sound volume	Adjust the volume level (page 36).
The images switch too quickly or too slowly.	Adjust the switching speed (page 27).
The switching lever does not work.	Turn off the AUTO button.
The mixing or wiping is not the way you want.	Turn off the mixing or wiping button which you do not want.
Beeps are bothering.	You can mute the beeps. See page 53.
Short beeps sound when you press a button, and another button flashes.	The flashing button must be activated at the same. Press the flashing button to turn on.
Short beeps sound when you press a PROGRAM MEMORY number button.	• No program memory is stored in the button. • The button does not have an option function.
Short beeps sound when you press an A/V ADJ. MEMORY button.	No adjustment is stored in the button.
Short beeps sound when you press ∧ , ∨ , < or > button.	You have reached the limit of the adjustable range.
You cannot execute the program memory.	Press the RECALL button first and then press the program number button.

Parts Identification

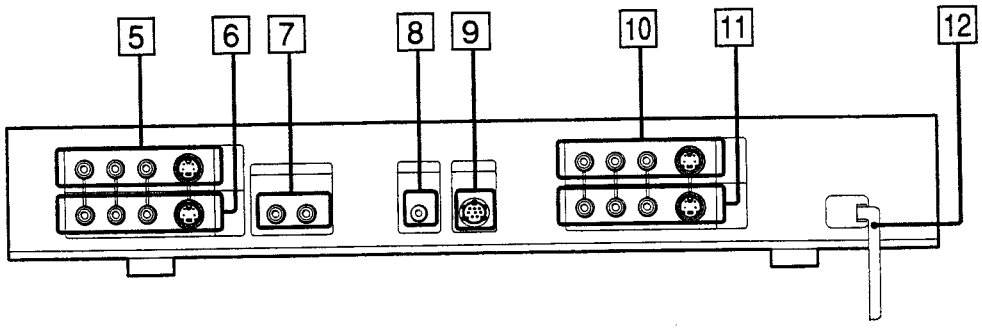
For the use of each control, see the pages indicated in the parentheses.

Main Unit

Front panel



Rear panel



Front panel

1 POWER ON/OFF switch and the STANDBY indicator (15)

2 EDIT I/F indicator (52)

3 INPUT 3 (S VIDEO/VIDEO/AUDIO L/R) jacks (10)

4 CONTROL UNIT connector (12)

Rear panel

5 INPUT 1 (S VIDEO/VIDEO/AUDIO L/R) jacks (9)

6 INPUT 2 (S VIDEO/VIDEO/AUDIO L/R) jacks (9)

7 AUX (auxiliary) AUDIO INPUT L/R jacks (11)

8 GPI INPUT jack (12)

9 EDIT I/F INPUT jack

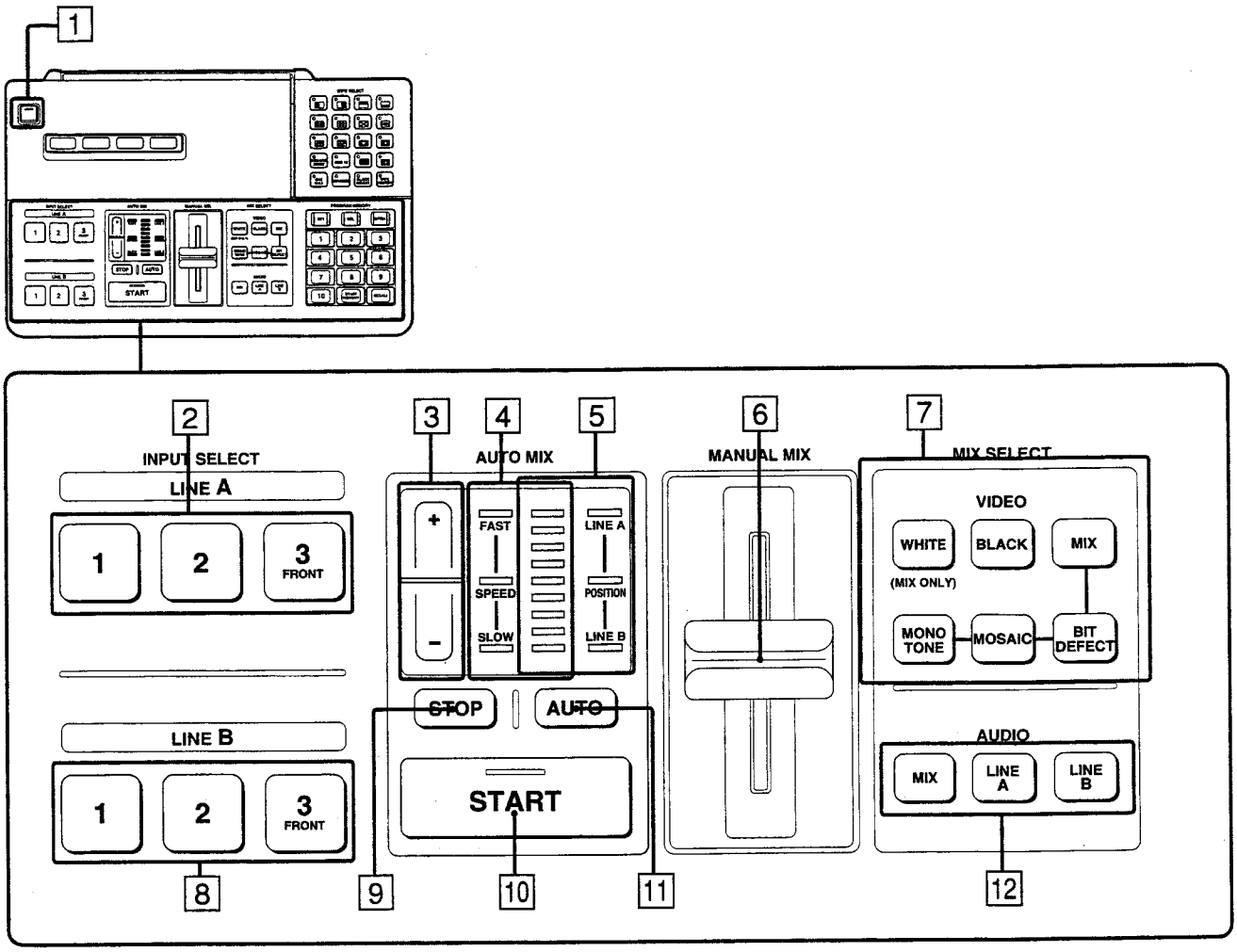
10 OUTPUT 1 (S VIDEO/VIDEO/AUDIO L/R) jacks (10)

11 OUTPUT 2 (S VIDEO/VIDEO/AUDIO L/R) jacks (11)

12 AC power cord

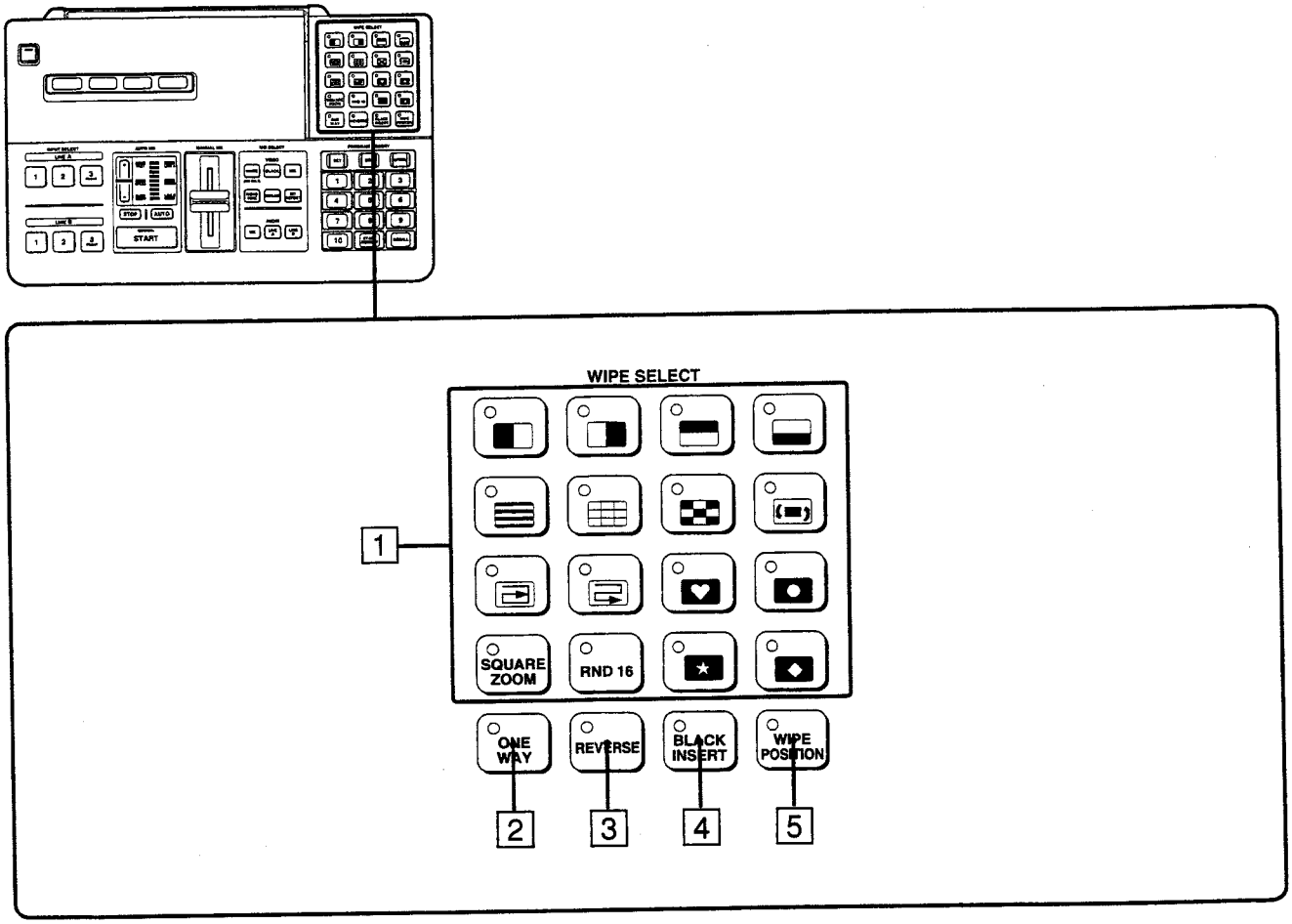
Control Unit

INPUT SELECT/AUTO MIX/MANUAL MIX/MIX SELECT section



1 POWER ON/STANDBY switch (13, 15)
2 LINE A input select buttons (16)
3 +/– switching speed adjustment buttons (27)
4 SPEED indicators (27)
5 POSITION indicators (26, 27)
6 Switching lever (14, 27)
7 MIX SELECT VIDEO switching pattern buttons (18, 19)
8 LINE B input select buttons (16)
9 STOP button (28)
10 START button (27)
11 AUTO button (27)
12 MIX SELECT AUDIO buttons (29)

WIPE SELECT section



1 Wipe pattern buttons (20)

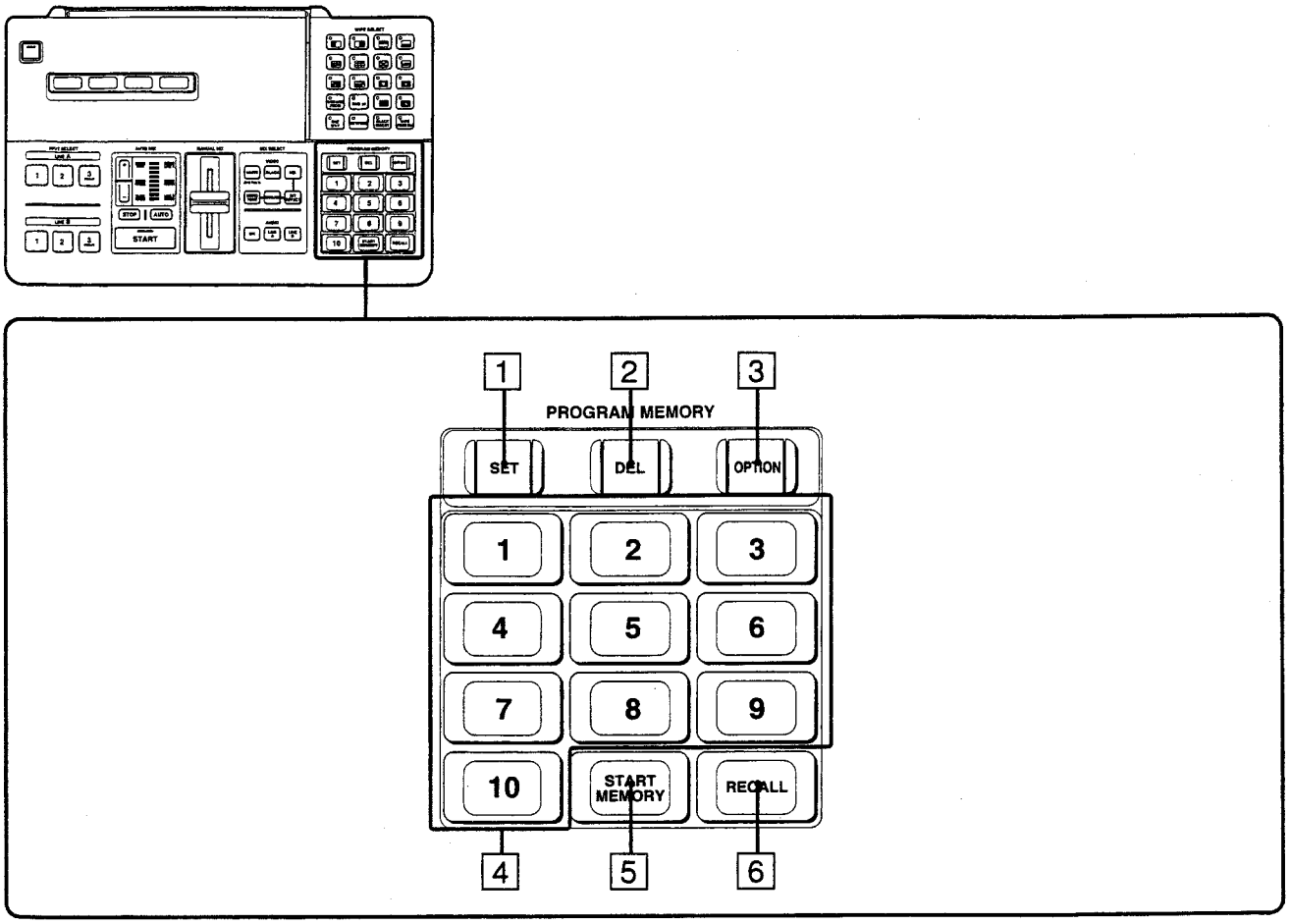
2 ONE WAY button (21)

3 REVERSE button (21)

4 BLACK INSERT button (21)

5 WIPE POSITION button (24)

PROGRAM MEMORY section



1 SET button (45, 48)

2 DEL button (47)

3 OPTION button (54)

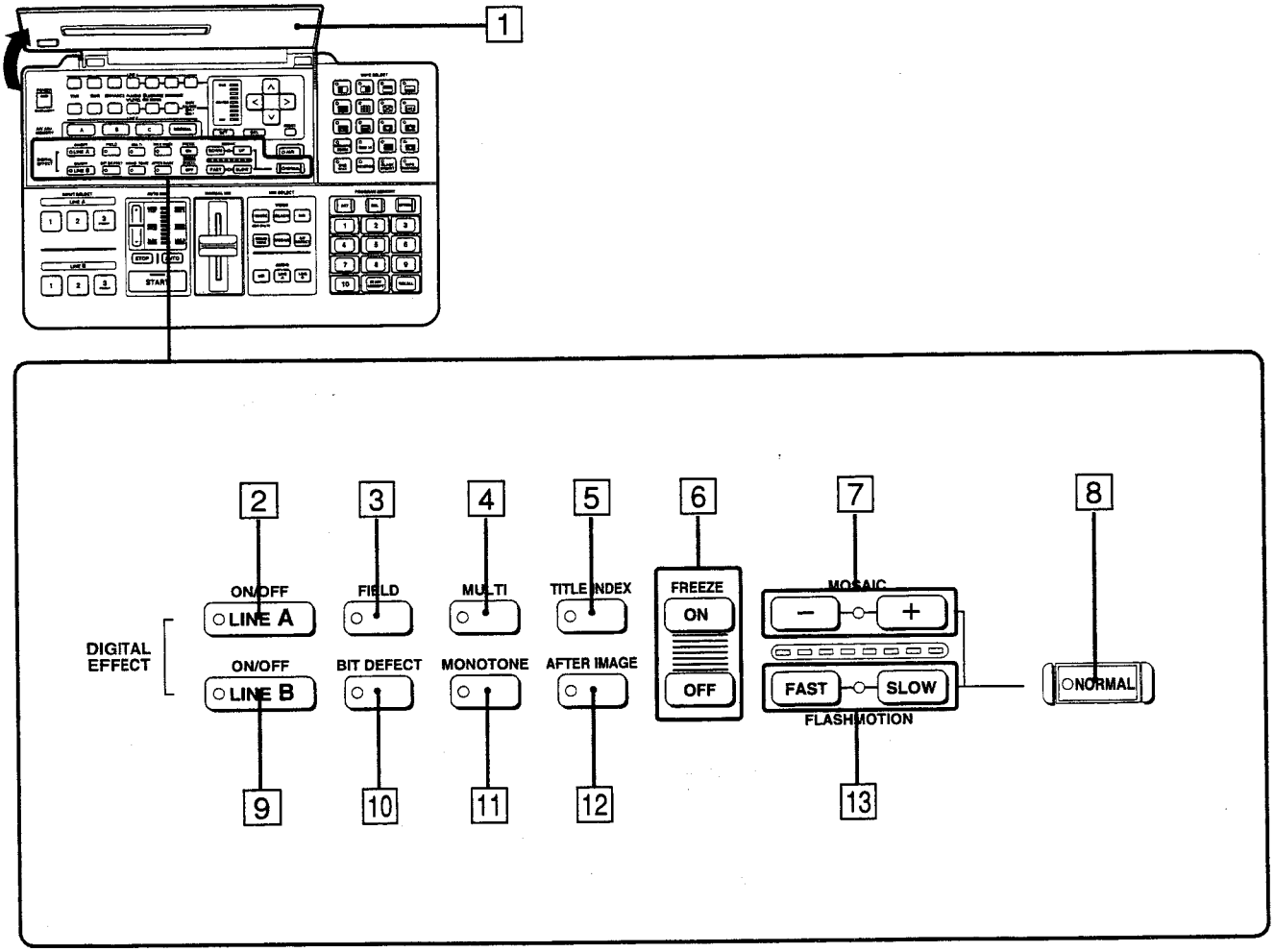
4 Program number buttons (45, 53)

5 START MEMORY button (48, 53)

6 RECALL button (46)

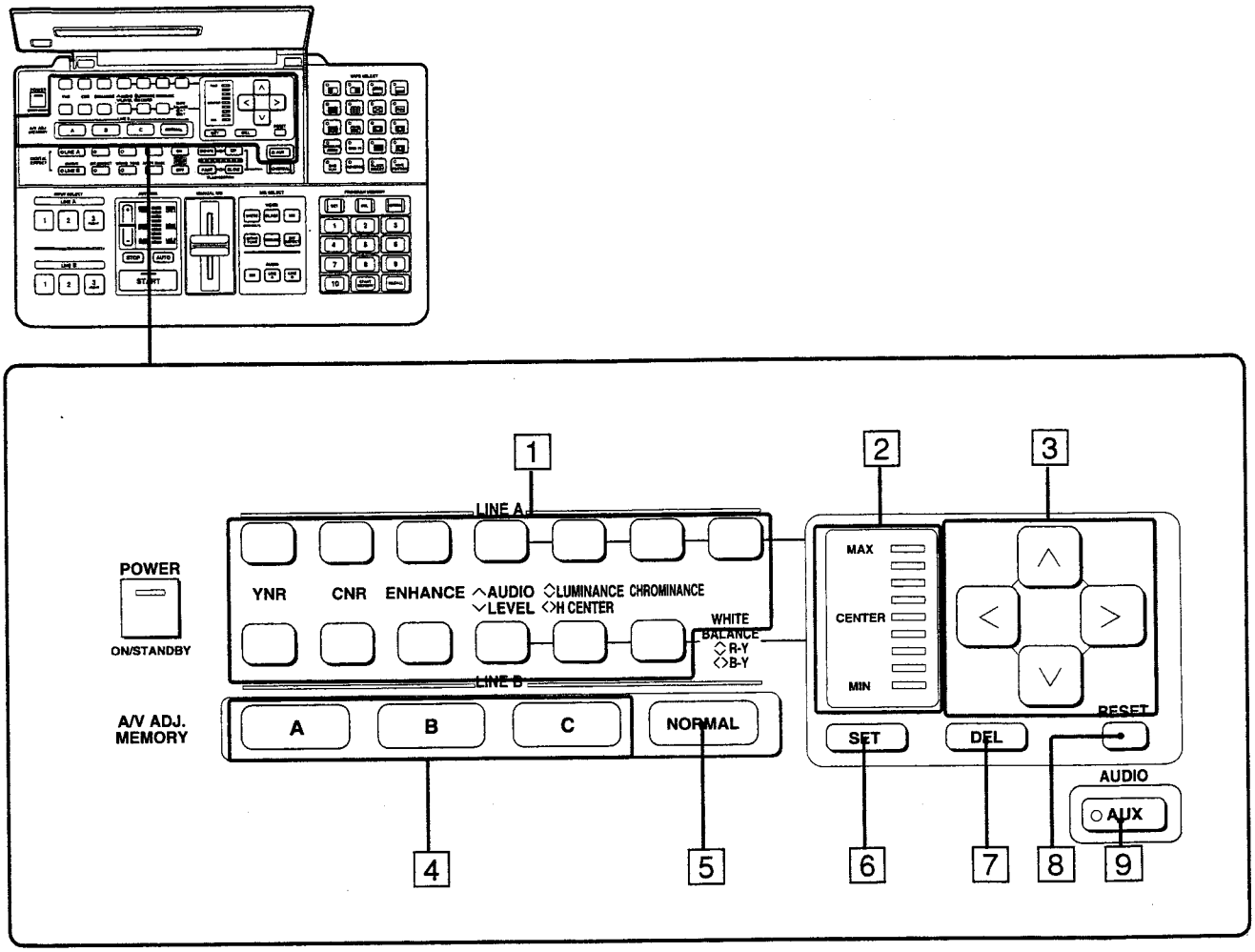
Parts Identification

DIGITAL EFFECT section



1 Cover
2 LINE A ON/OFF button (32)
3 FIELD button (30, 32)
4 MULTI button (30, 32)
5 TITLE INDEX button (30, 32)
6 FREEZE ON/OFF buttons (30, 32)
7 MOSAIC +/– buttons (30, 32)
8 NORMAL button (32)
9 LINE B ON/OFF button (32)
10 BIT DEFECT button (30, 32)
11 MONOTONE button (30, 32)
12 AFTERIMAGE button (30, 32)
13 FLASHMOTION FAST/SLOW buttons (30, 32)

A/V adjustment section



1 LINE A/LINE B adjustment item select buttons (34)

2 Adjustment level indicator

3 Adjustment buttons

4 A/V ADJ. MEMORY A/B/C buttons (41)

5 NORMAL button (40)

6 SET button (41)

7 DEL button (42)

8 RESET button (40)

9 AUDIO AUX button (29)

Specifications

Electrical characteristics

Video system	PAL
Signal system	Double frame synchronizing
Video switching	Vertical blanking
Video processing	Component system (Y/R-Y/B-Y)
Quantization	8-bit
Sampling rate	14.218 MHz for Y, 3.55 MHz for R-Y/B-Y
Memory capacity	1 frame per A/B system

Video performance

DP (10 to 90 % APL)	Less than 3°
DG (10 to 90 % APL)	Less than 6 %
Cross talk (4.43 MHz)	Less than –52 dB
Frequency response (1 MHz reference)	300 kHz to 5.0 MHz $^{+1.0}_{-4.0}$ dB
S/N	More than 45 dB
Horizontal resolution	More than 500 TV lines
Luminance level variable range	About ±10 %
Horizontal center level variable range	About ±0.5 µSEC
Chrominance level variable range	About ±10 %
White balance level variable range	About ±50 %

Audio performance

Line audio level variable range	About ±10 dB
Frequency response	20 Hz to 20 kHz
Distortion	Less than 0.2 %
S/N	More than 60 dB
Cross talk	Less than –60 dB

Input

Video	3 lines, (INPUT 1/2/3 (front)) S-VIDEO IN: 4-pin mini DIN connectors (3) Luminance: 1 Vp-p, 75 Ω, unbalanced, sync negative Chrominance: 286 mVp-p, 75 Ω, unbalanced VIDEO IN: Phono jacks (3) 1.0 Vp-p, 75 Ω, unbalanced, sync negative
Audio	4 lines (INPUT 1/2/3 and AUX) Phono jacks –7.5 dBs, impedance 1 kΩ or more
GPI	Mini jack
EDIT I/F	8-pin mini DIN connector

Output

Video	2 lines (OUTPUT 1/2) S VIDEO OUT: 4-pin mini DIN connectors (2) Luminance: 1 Vp-p, 75 Ω, unbalanced, sync negative Chrominance: 286 mVp-p, 75 Ω, unbalanced VIDEO OUT: Photo jacks (2) 1.0 Vp-p, 75 Ω, unbalanced, sync negative
Audio	2 lines (OUTPUT 1/2) Phono jacks –7.5 dBs, impedance 47 kΩ or less

General

Power requirements	European models except United Kingdom: 220 – 230 V AC, 50/60 Hz United Kingdom models: 240 V AC, 50 Hz
Power consumption	24 W
Operating temperature	5 °C to 35 °C (41 °F to 95 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions	Main unit About 430 x 71 x 367 mm (w/h/d) (17 x 2 7/8 x 14 1/2 inches) Control unit About 340 x 55 x 225 mm (w/h/d) (13 1/2 x 2 1/4 x 8 7/8 inches)
Mass	Main unit About 5 kg (11 lb) Control unit About 1 kg (2 lb 3 oz)
Supplied accessories	See page 5.

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Precautions

On safety
- Do not open the cabinet. Refer servicing to qualified personnel only.
- Should any liquid or solid object fall into the cabinet, disconnect the power source and have the unit checked by qualified personnel before operating it any further.

On power sources
- The nameplate indicating operating voltage, power consumption, etc., is located on the rear panel of the main unit.
- Operate the digital SEG on the specified voltage only.

On installation
- Allow adequate air circulation to prevent internal heat buildup.
- Do not install the unit near heat sources such as a radiator or air duct, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On cleaning
Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent such as alcohol or benzine which may damage the finish.

On transportation
Do not throw away the carton and packing materials. They make an ideal container in which to transport the units. When shipping the units to another location, repack it as illustrated on the carton.

Caution
Television programs, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.

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